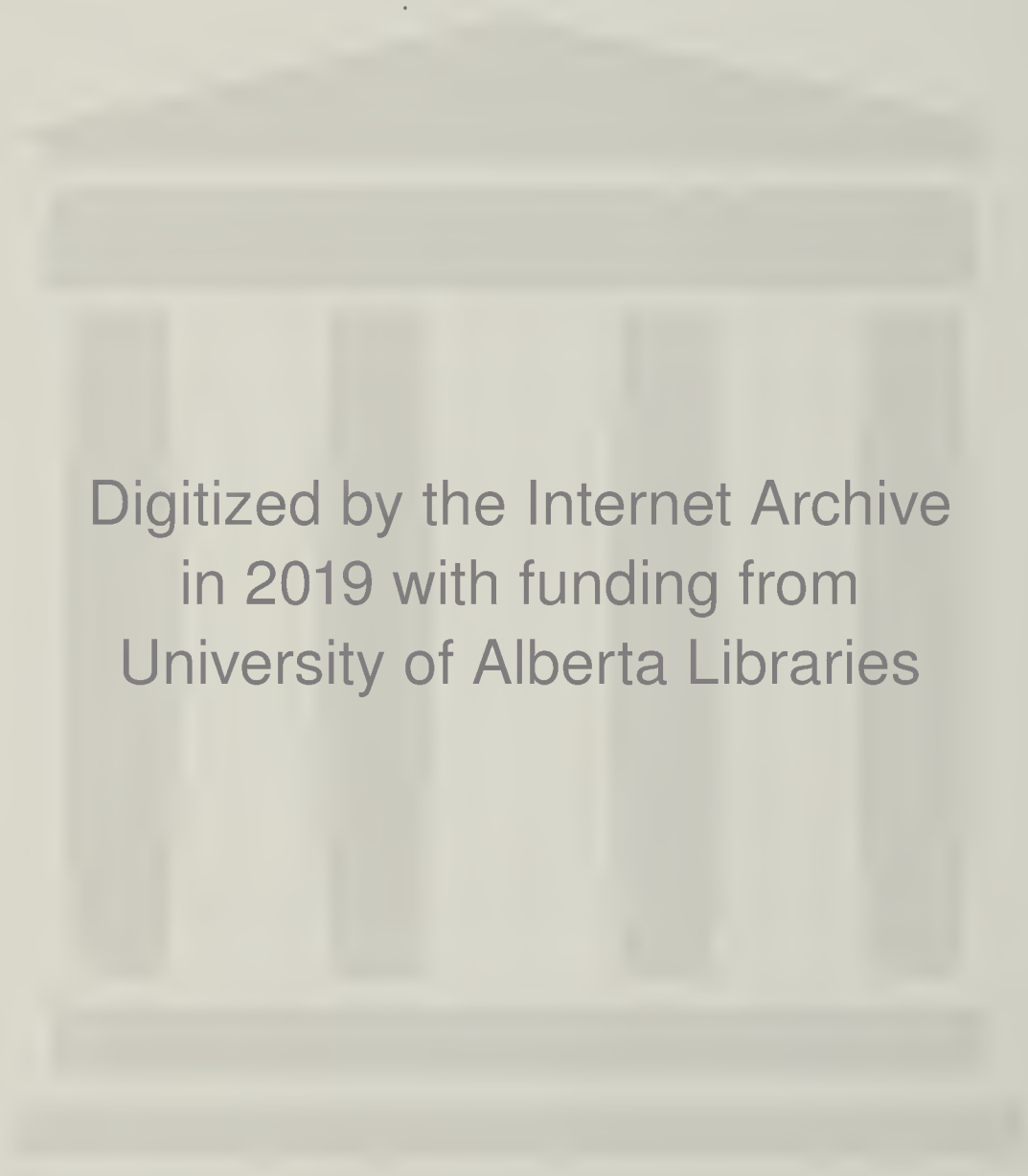

blue jay

June, 1976

Blue Jay

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Spotted Touch-me-not Wayne Harris

EXTRA-LIMITAL OCCURRENCE OF ROCKY MOUNTAIN JUNIPER IN SOUTHEASTERN ALBERTA

W. W. SMITH and C. A. WALLIS, 8220 Elbow Drive, Calgary, Alberta

Rocky Mountain Juniper (*Juniperus scopulorum* Sarg.) is an erect shrub, or small tree, which is distributed primarily west of the Rocky Mountain Divide. However, there are numerous records of this species east of the continental divide; most from the United States. Little lists 15 locations in the eastern half of Montana and 11 locations in North Dakota.[3]

In Alberta, this juniper occurs with some regularity at three locations east of the continental divide, but still within the mountainous regions at Banff, Crownest Pass and Waterton Lakes. Kuijt and Trofymow list two extra-limital occurrences in Alberta.[2] These locations are Glenwood (near Cardston) and just north of Lethbridge. Kuijt and Trofymow stated

that these two occurrences "represent a remarkably clear-cut example of natural long-distance dispersal". The probable mechanism of spreading was birds eating juniper berries and subsequently spreading the seeds, which are not digested, to new sites.[1]

In May 1975, an individual tree (figure 1) of Rocky Mountain Juniper was discovered at the head of a small steep coulee in the Mixed Grassland region of southeastern Alberta near the United States-Canada border (SE 5-1-4-W4) at an elevation of 2,900 feet. The coulee is fairly short with a north-south orientation and drains south into the Milk River valley. The plant was an erect tree of approximately 16 feet growing at the bottom of the coulee. It was growing at the base of an eroded slope with such species as creeping juniper (*Juniperus horizontalis*), buckbrush (*Symphoricarpos occidentalis*), wolf willow (*Elaeagnus commutata*), rose (*Rosa* spp.), and sand grass (*Calamovilfa longifolia*). A specimen has been deposited at the University of Calgary Herbarium.

Due to the isolated nature of the area, we believe that the occurrence of this tree is the result of natural dispersion. It appears to us that the origin of this tree, and possibly the Lethbridge tree reported by Kuijt and Trofymow lies to the south. There are numerous areas where Rocky Mountain Juniper occurs south of this site in Montana, the closest lying 30 miles west-southwest in the Sweetgrass Hills (Wayne Strong, personal communication).

One of the more interesting aspects of this record is that this juniper is surviving in one of the hottest, driest portions of Alberta about two thousand feet below its lowest limit of occurrence in the Sweetgrass Hills. Although it is assumed that these isolated junipers grew from seed dispersed by birds, such occurrences must be extremely rare. Otherwise, one would expect Rocky Mountain Juniper to occur in what appears to be suitable habitat in the Cypress Hills.

[1]HITCHCOCK, C. L., A CRONQUIST and M. OWNBEY. 1969. *Vascular Plants of the Pacific Northwest*. University of Washington Press, Seattle.

[2]KUIJT, J. and J. A. TROFYMOW. 1975. *Range Extensions of Two Rare Alberta Shrubs. Blue Jay* 33(2):96-98.

[3]LITTLE, E. L. 1971. *Atlas of United States Trees. Vol. I. Conifers and Important Hardwoods.*

BLOWFLY INFESTATION UPON HOUSE WRENS

BRUCE D. BEMBRIDGE, 9019-98 St., Edmonton, Alberta, T6E 3M6

On 12 July 1975 I was checking nest boxes in the Whitemud Creek (Edmonton) area, 300 meters north of 45th Avenue on the west side of the creek. The nest in question was located just within a mature poplar stand at the bottom of a southeast facing slope. The nestlings hatched on 6 July. Upon checking the box on 12 July I was greeted by the gaping mouth of a nestling whose forehead, one wrist, and both feet were grotesquely inflamed. The other nestlings were similarily infested in varying degrees. Two of the nestlings were taken for laboratory tests. Subcutaneous larva were collected and subsequently identified as *Protocalliphora hirudo* a green bottle, blowfly. The remaining five nestlings seemed to develop normally compared to other wren nestlings of similar age. By 15 July all swellings had subsided and the nestlings were banded. On 20 July, 15 days after hatching the nest was empty. On 24 and 26 July banded young were seen in the area around the nest box.

Black Witch Moth B. J. Godwin

BLACK WITCH MOTH AT OLDS, ALBERTA

B. J. GODWIN, Olds College, Olds, Alberta

According to "The Moth Book" by Holland, the Black Witch, *Erebus odora* Linnaeus, "occurs abundantly in Southern Florida and the warmer portions of the Gulf States" and is found throughout Central America and tropical South America. "It is found as a straggler into the Northern portions of the United States, and has even been taken in Canada." Although the writer has not checked thoroughly with Alberta collections and museums, some interesting facts are known. The Banff Museum has a worn specimen with the following information: Standish Yard, Banff, Alberta, August 9, 1910, N. B. Sanson. The University of Alberta Department of Entomology collections have a single worn specimen collected in August 1931 by E. H. Strickland. The Olds College specimen was collected by Steven Bloss and mounted by the writer. It was found fluttering on the window of the family garage, 8 miles north of Olds on August 16, 1974, where it was first mistaken for a bat.

This specimen, with a wing span of 16 cm. (6.3 inches) is an interesting addition to the records of unusual moths collected in Alberta.

* * * *

LOCAL BIRD NAMES. Brewer's Sparrow: Road-runner (Sask.). From *Folk-Names of Canadian Birds*, W. L. McAtee. Bull. 149, Nat. Mus. Canada. 1959.

MAYFLIES

DENNIS M. LEHMKUHL,
Biology Department, University of Saskatchewan, Saskatoon.

Mayflies are appreciated most by trout, trout fishermen, bridge nesting swallows, a handful of Ephemeropterists, and maybe by other mayflies. In general, they are loathed by collectors because they are hard to identify and because there are few insects less attractive than a shrivelled and faded mayfly impaled on a pin in a collection. This is a result of their delicate and fragile structure and, as a consequence, they are less well studied than some other insect groups of comparable size (approximately 500 North American species).

An adult mayfly in nature is a work of art and their transient beauty has inspired poets to write in many languages of the ephemeral nature of all living things, including ourselves. The popular conception of the short life of mayflies (*Ephemeroptera*) is, however, somewhat of a misrepresentation. Some do live but a day in the adult stage, such as our *Ephoron album* which are like a summer snowstorm as they emerge over the Saskatchewan River on August evenings, their reduced legs indicating how little time is spent on a solid surface. Then there is the more extreme case of female *Lachlania saskatchewanensis,* where the legs of the females are completely useless, probably decreeing that to alight is to die; I have seen adults of this species only as windrows of dead mayflies along the river shore. It is also true that the mouthparts of adult mayflies are reduced and functionless and they probably take no food or water as adults. But it must be remembered that the nymphal stage has lasted for months or in some cases years beneath the water surface.

This paper has two purposes, the first is to provide a means of identifying families of adult mayflies of North America (nymphs can be identified by using Lehmkuhl, 1975c), and, second, to introduce the mayflies of Saskatchewan (See also Lehmkuhl, 1970). Identification of adults to family is considered difficult in some cases even by professional entomologists because all adults look quite similar (Figs. 1 and 2 illustrate two extremes) and the family characteristics are found in details of wing venation. I have departed from the usual "key" method of identification and have attempted to use in Table 1 and Figures 6-21 a modified Peterson Field Guide technique. There is no easy road to adult identification, so I would suggest that the first step is to use a 10X hand lens and sketch the major arrangement of veins in the specimen at hand. It may be necessary to remove the wing from the specimen to get clear view. Next, compare the drawing with the six categories in Figures 6-21 and select the correct one. Finally, go to the proper category in Table 1 which will lead you to the family name. A list of Saskatchewan families, genera, and known species is found in Table 2.

The mayflies of Saskatchewan present a most unusual and fascinating situation. While the number of identified species is about 60 (with a dozen or so yet to be identified), the number of genera (that is, major types) is about 35, and 12 of the 15 North American families can be collected in the province. Such diversity in a northern inland locality is unusual when compared, for example, to the "poor" fauna of Dragonflies, Damselflies and Alderflies.[6 7] This variety of mayflies is not readily explained, but it probably has to do with the immigration from east, west, north and south, in combination with the glacial history and climate of the area. In terms of origin, our mayfly fauna invaded from all directions after the decline of the ice age. Based on current distributions,

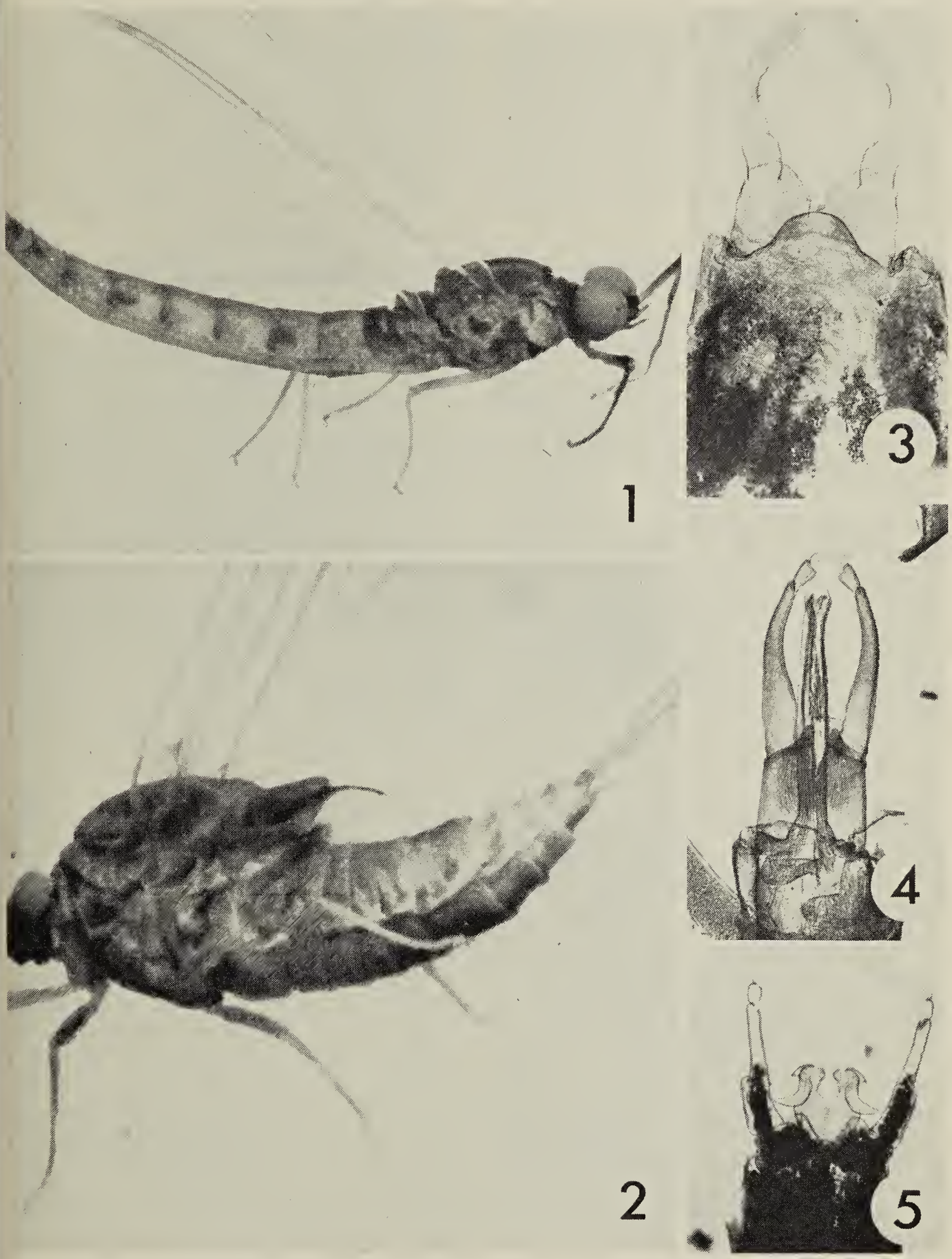


Figure 1. Adult male of *Analetris eximia*; Fig. 2. Adult female of *Baetisca bajkovi*; Figs. 3-5. male genetalia of *Analetris eximia, Paraleptophlebia praepedita,* and *P. debilis.*

there are four faunal regions in Saskatchewan: Boreal, Saskatchewan River, Cypress Hills and Prairie.

Few kinds of mayflies are found on the true prairie. Potholes are likely to yield only *Callibaetis* but occasionally *Caenis* or even *Siphlonurus* may be encountered. The boreal forest is characterized mainly by a typical "eastern" assemblage of *Heptagenia* (Fig. 27) and *Stenonema*, plus widespread forms such as *Baetis* (Fig. 22), *Paraleptophlebia*, *Leptophlebia*, *Ephemerella* (Fig. 23) and *Tricorythodes* (Fig. 25).

Many western species reach their eastern limits in the Cypress Hills, including *Epeorus longimanus*, *Cinygma* sp., and *Ameletus* sp. Of most interest is the Saskatchewan River fauna where one can collect *Ametropus* (Fig. 24), *Metretopus*, *Dactylobaetes*, *Baetisca* (Fig. 35), *Brachcercus*, *Anepeorus*, *Pseudiron*, *Choroterpes*, *Traverella*, *Lachlania* (Fig. 31) *Ephoron*, *Analetris*, and *Isonychia*. The origin of this diverse assemblage, probably one of the most unusual in North America, is a chapter in itself which remains to be written, but see Lehmkuhl, 1970, 1972 and 1976.

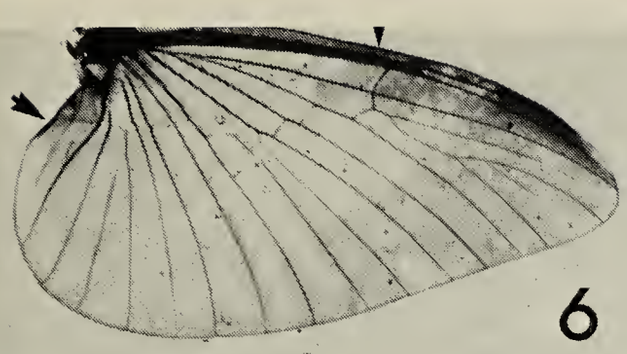
The mayfly life cycle is relatively simple except for one unique stage, the subimago. This stage is found in no other insect. It emerges from the aquatic nymph and while it looks like an adult and is capable of flight, it differs in that it is sexually immature, the body is covered with a dull velvety cuticle which must be shed, and various body parts, such as legs or genitalia, may be underdeveloped.

Adult males congregate in swarms, the size, timing and location of which varies greatly with the species. Ripe females fly into the swarm to be grasped from below by the long front legs and terminal abdominal "forceps" (Figs. 1, 3-5) of the male. Sperm is passed from the penis of the male (blade and rod-like structures in Figs. 3-5) to the genital openings on the underside of the body of the female. In many species the female quickly drops to the water surface and the eggs are released (Fig. 44). During swarming and oviposition, birds, bats and fish take a heavy toll of adults.

Eggs may have a smooth surface (Fig. 43) or they may have attachment structures of various types (Figs. 37, 39, 40). In *Baetis*, the female crawls beneath the water surface and lays eggs in neat square masses, often found in abundance on stones in mountain or boreal streams (Fig. 36).

Eggs hatch into nymphs, various types of which are illustrated in the figures. While adults look quite similar in all families, the nymphal stage shows great diversity. Basic mouthparts of a chewer, such as *Baetis*, are illustrated in Figure 38. These same structures may be modified into scrapers and filters as in Figure 41. Among burrowing mayflies mandibles may even be modified into forward projecting tusks as in Figures 42 and 26. Gills, which are found on the abdomen of all North American mayflies, are basically flat plates (Figs. 29 and 33a,b) but may be modified into rods, double plates, forks, filaments or brushes, depending on the genus and species (Figs. 28, 30, 34). Such readily seen differences makes identification of mayfly nymphs relatively easy.

Nymphs occupy a wide range of niches. Heptageniids (Fig. 27) are flat and live on rocks in streams where they scrape algae for food while *Baetis* (Fig. 22) may live on the same rock but the body shape is streamlined and fish-like. *Ephemerella* (Fig. 23), *Tricorythodes* (Fig. 25) and *Baetisca* (Fig. 35) all tend to be bottom sprawlers on gravelly or sediment substratem All have plate-like or operculate (covered) gills to protect the respiratory surface from settling debris. *Ephemera* (Fig. 42), along with *Hexagenia* (Fig. 26) and *Ephoron* are burrowers, making tubes in semi-impacted gravel or mud bottom of lakes and rivers. *Ametropus* (Fig. 24) and *Lachlania* (Fig. 31) are filter and particle feeders, the former anchoring itself on sand bars with 4 legs while snatching and sorting passing particles from the current; *Lachlania* grasps roots and stones in deep water and the



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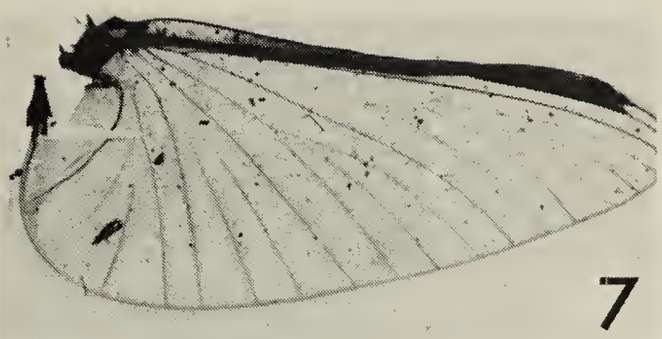

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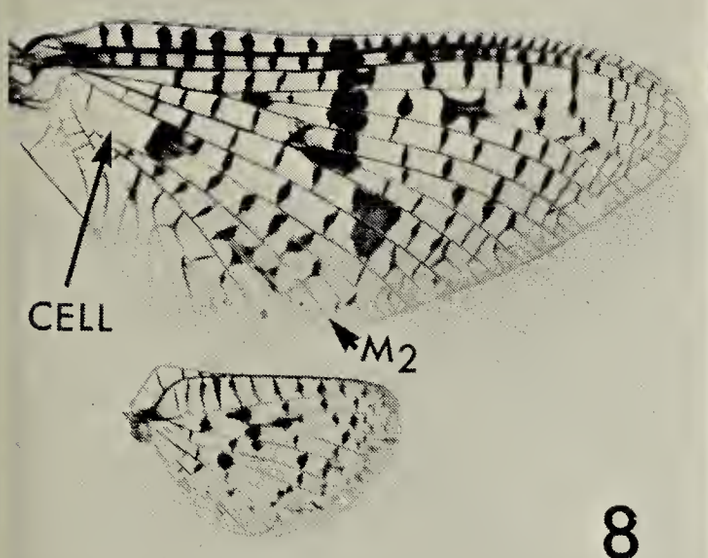
CATEGORY I. HIND WINGS ABSENT, BODY SIZE SMALL, APPROX. 1/4 INCH.



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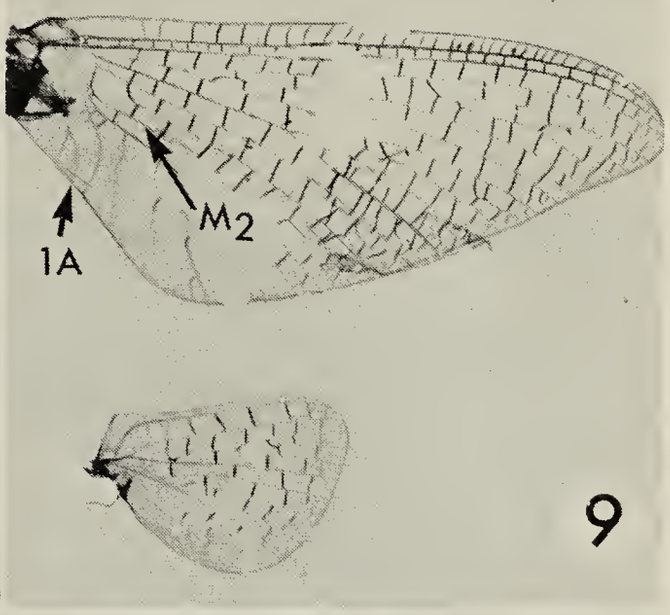

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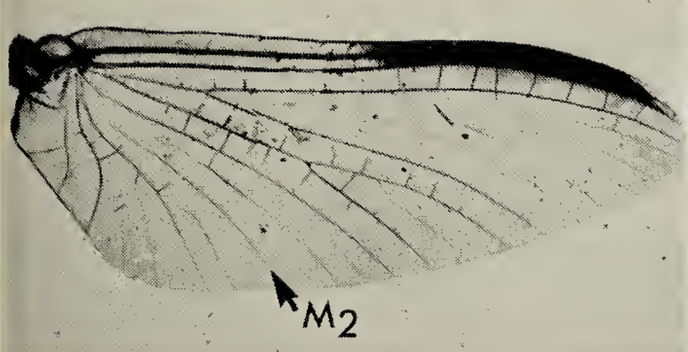

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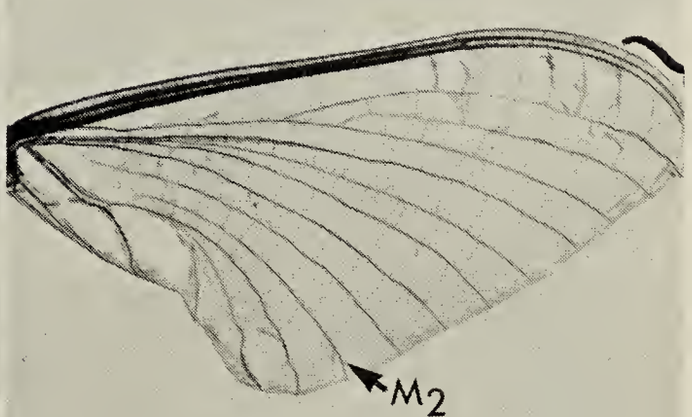

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CATEGORY II. SHARP BEND NEAR BASE OF VEIN M_2 RESULTING IN LARGE CELL.

Figure 6. Wings of *Brachycercus*; Figure 7. *Tricorythodes*; Figure 8. *Ephemera*; Figure 9- *Potamanthus*; Figure 10 *Neoephemera*; Figure 11. *Totopus*.

rapid current of river while filtering food with the fringes of the front legs. *Isonychia*, not at all closely related to either, is also a filter-feeder. Additional Saskatchewan genera, illustrated in Lehmkuhl, 1975c but not here, are *Brachycercus, Epeorus, Paraleptophlebia, Ephoron* and *Siphlonurus.*

Most mayfly nymphs are herbivorous, the sheep and rabbits of the aquatic insect world. A few local species are carnivores, and these rare insects inhabit one of the last unpolluted strongholds in the Saskatchewan River. They are *Anepeorus, Pseudiron* and *Analetris.*

Mayflies are a fascinating group of animals that have been relatively poorly studied, thus leaving room for original discoveries by naturalists. Adults and nymphs are best preserved in alcohol or the adults may be mounted on pins. Nymphs are easily kept in well aerated aquaria where they can be studied. Mayflies are abundant and easily collected, the nymphs especially in flowing water, and the adults while swarming over water, resting on leaves near water, or at porch lights near water.

Acknowledgements: This article was based in part on the drawings of A. R. Brooks. Photographs were prepared by John Waddington, from specimens in the author's collection.

Table 1. Families of adult mayflies. Compare with Figures 6-21.

Category I — Hind wings absent, body size small, approx. 1/4 inch.

Caenidae — crossveins few, usually a single arch-like series of crossveins in basal area (Fig. 6).

Tricorythodae — crossveins faint, more numerous — 15 or more scattered through wing (Fig. 7).

Note: Some Baetidae lack a hind wing, but they differ from the above in that the lateral ocelli (simple eyes) are not more than 1/4 the size of the compound eyes while in the above the ocelli are about 1/2 as large as the compound eyes.

In all the following the hind wings are present (except some Baetidae, see above).

Category II — Sharp bend near base of vein M_2 often resulting in a large cell near base of wing.

Polymitarcidae — Represented in our area by *Ephoron* (widespread) and *Tortopus* (Manitoba). Veins at front wing tip curve around margin (*Tortopus*, Fig. 11) or with front legs of male reduced to functionless stubs (*Ephoron*).

Potamanthidae — not found in our area. Vein 1A of front wing forked (Fig. 9).

Neoephemeridae — not found in our area. Sharp costal projection on hind wing (Fig. 10).

Ephemeridae — Large mayflies common in our area. Lack characters specified for above 3 but with prominent large basal cell (Fig. 8).

Category III — Front wing lacks forks in veins in outer half.

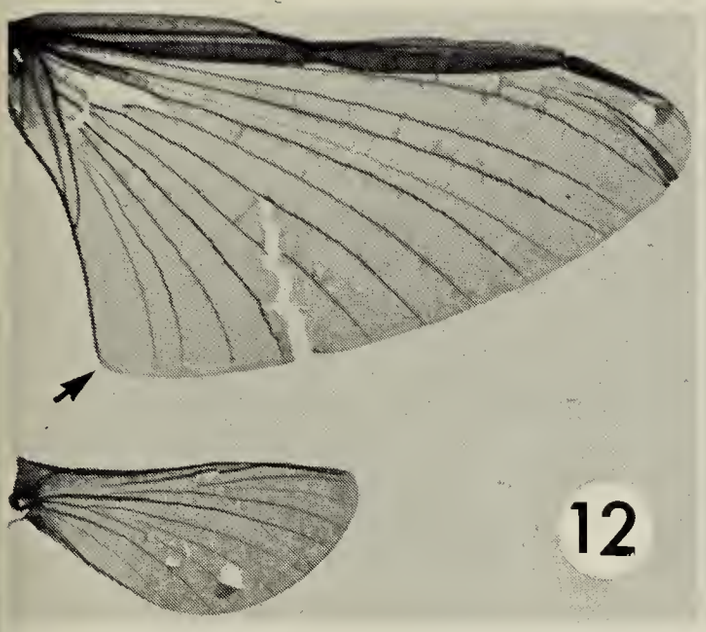
Baetidae — rear angle of wing rounded (Fig. 13); common in our area.

Behningiidae — rear angle of wing not rounded (Fig. 12); not found in our area.

Category IV — Two pairs of longitudinal veins at hind angle of front wing. (*Note: Metretopus* (Ametropodidae) has only one pair of veins in this position).

Heptageniidae — Hind tarsi with 5-segments (Wing, Fig. 16) (except the rare *Pseudiron*, Fig. 14 which has 4 segments).

Ametropodidae — Hind tarsi 4-segmented. Wing Fig. 15.



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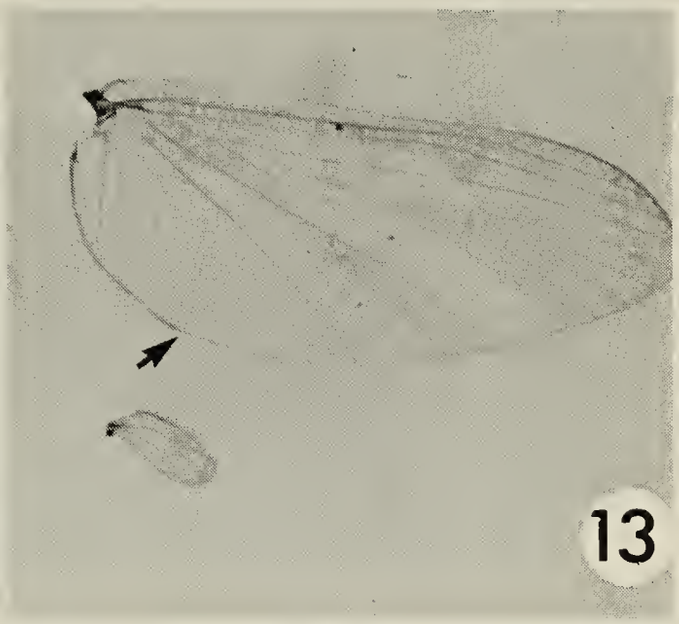

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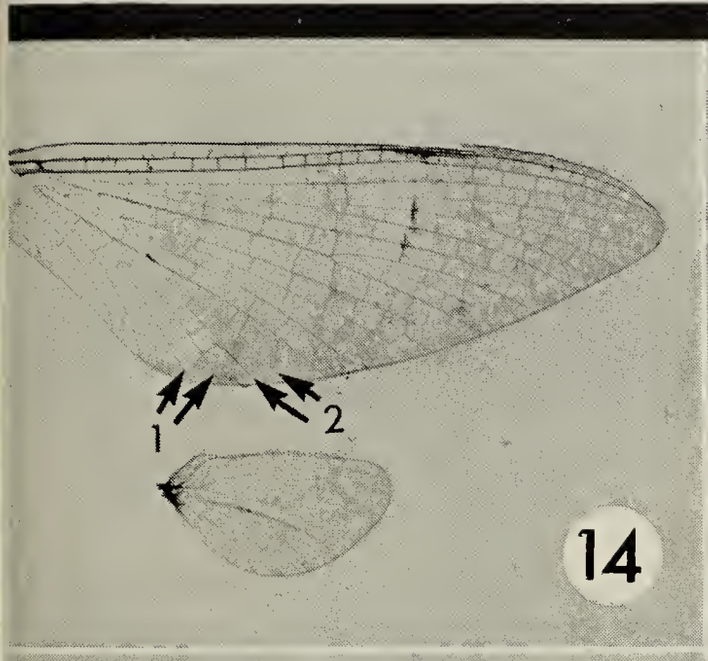
CATEGORY III. OUTER HALF OF FRONT WING LACKS FORKS IN VEINS. (SEE ALSO VI)



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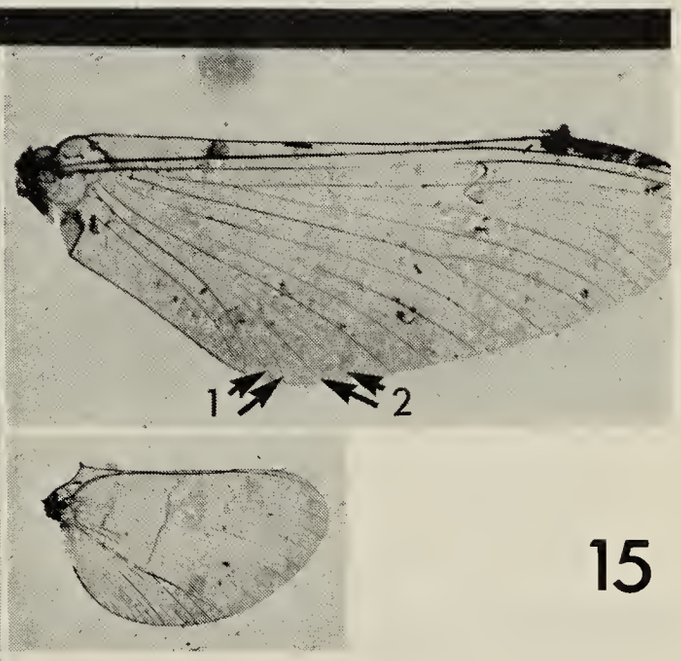

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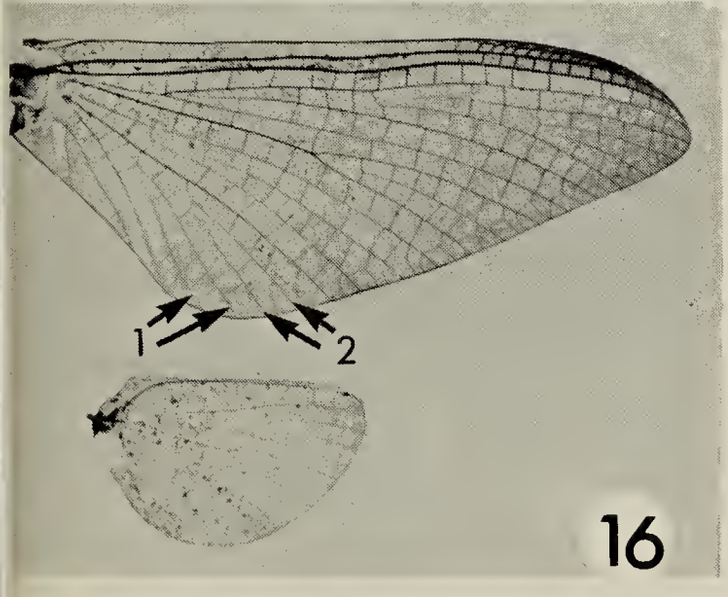

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CATEGORY IV.

TWO PAIRS OF LONGITUDINAL VEINS AT HIND ANGLE OF FRONT WING.

Figure 12 *Dolania*; Figure 13. *Baetis*; Figure 14. *Pseudiron*; Figure 15. *Ametropus*; Figure 16. *Epeorus*.

Category V — Without two pairs of longitudinal veins at hind angle of front wing, *but with* numerous veins attached to inner hind angle of wing.

Vein Cu_2 strongly curved.

Ephemerellidae — with 1 or 2 long intercalary veins (I) between vein Cu_1 and M_2 (Fig. 17).

Leptophlebiidae — without a long intercalary vein between Cu_1 and M_2 (Fig. 18).

Vein Cu_2 not curved.

Baetiscidae — Hind wing oval or round in shape, Fig. 20.

Siphlonuridae — Hind wing triangular in comparison, Fig. 19.

Category VI — Venation reduced to 4 or 5 longitudinal veins in front wing.

Oligoneuriidae — the genus *Lachlania* in our area, Fig. 21.

Table II

A preliminary list of the mayflies of Saskatchewan based primarily on the author's collection.

Ametropodidae
- *Ametropus albrighti* Traver
- *Metretopus borealis* Eaton
- *Siphloplecton interlineatum* (Walsh)

Baetidae
- *Baetis quilleri* Dodds
- *Baetis vagans* McDunnough
- *Baetis* spp. (at least 7)
- *Callibaetis* spp. (at least 3)
- *Centroptilum* spp.
- *Cloeon* spp.
- *Dactylobaetes* sp.
- *Pseudocloeon* spp.

Baetiscidae
- *Baetisca bajkovi* Neave
- *Baetisca obesa* (Say)

Caenidae
- *Brachycercus prudens* (McDunnough)
- *Caenis simulans* McDunnough

Ephemerellidae
- *Ephemerella aurivillii* (Bengtsson)
- *Ephemerella grandis* Eaton
- *Ephemerella inermis* Eaton
- *Ephemerella lita* Burks
- *Ephemerella simplex* McDunnough
- *Ephemerella temporalis* McDunnough

Ephemeridae
- *Ephemera simulans* Walker
- *Hexagenia limbata*

Heptageniidae
- *Anepeorus rusticus* McDunnough
- *Cinygma* sp.
- *Epeorus longimanus* (Eaton)
- *Epeorus* sp.
- *Heptagenia elegantula* (Eaton)
- *Heptagenia flavescens* (Walsh)
- *Heptagenia hebe* McDunnough
- *Heptagenia pulla* (Clemens)
- *Heptagenia solitaria* McDunnough
- *Rhithrogena* sp.
- *Stenonema interpunctatum* (Say) (now *Stenacron*)
- *S. tripunctatum* (Banks)
- *S. vicarium* (Walker)
- *Pseudiron centralis*
- Undescribed genus

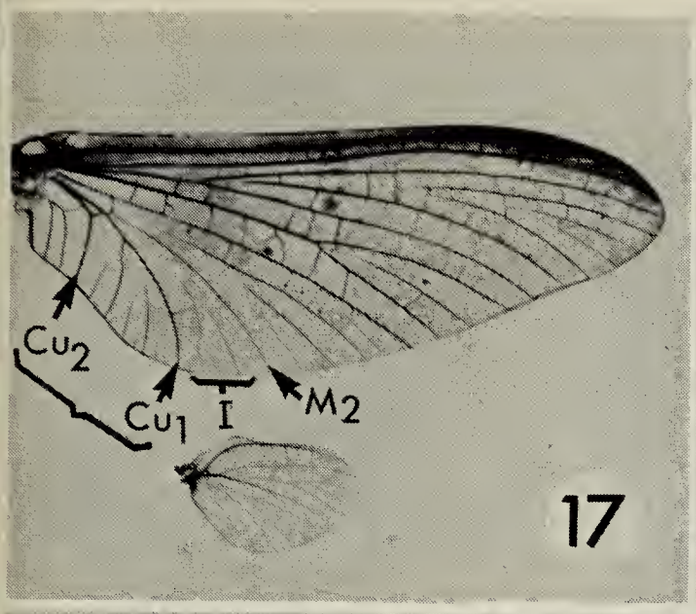
Leptophlebiidae
- *Choroterpes albiannulata* McDunnough
- *Leptophlebia cupida* (Say)
- *Paraleptophlebia debilis* (Walker)
- *P. praepedita* (Eaton)
- *P. adoptiva* (McDunnough)
- *P. moerens* (McDunnough)
- *Traverella albertana* (McDunnough)

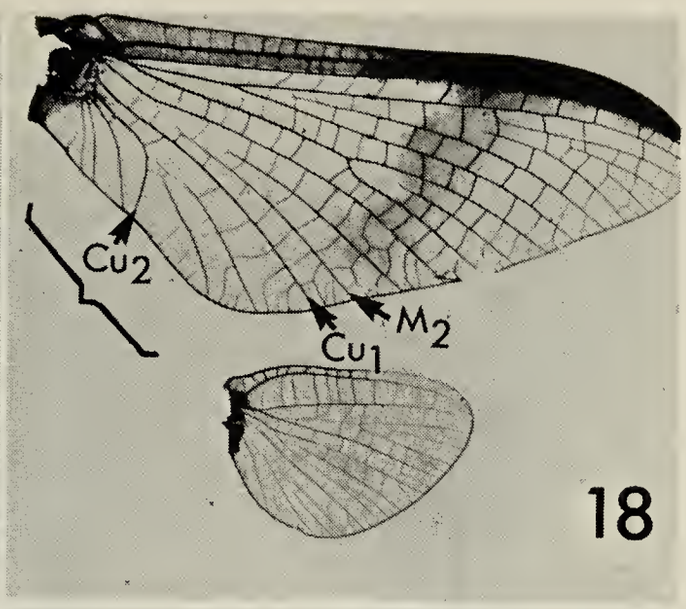
Oligoneuriidae
- *Lachlania saskatchewanensis* Ide

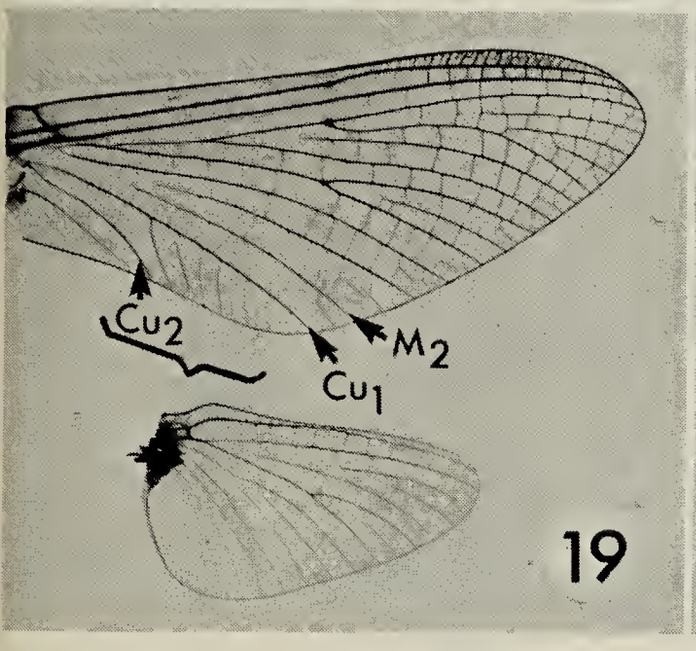
Polymitarcidae
- *Ephoron album* (Say)
- *Tortopus primus*
  - — *Campsurus manitobensis* Ide
  - — Manitoba only.

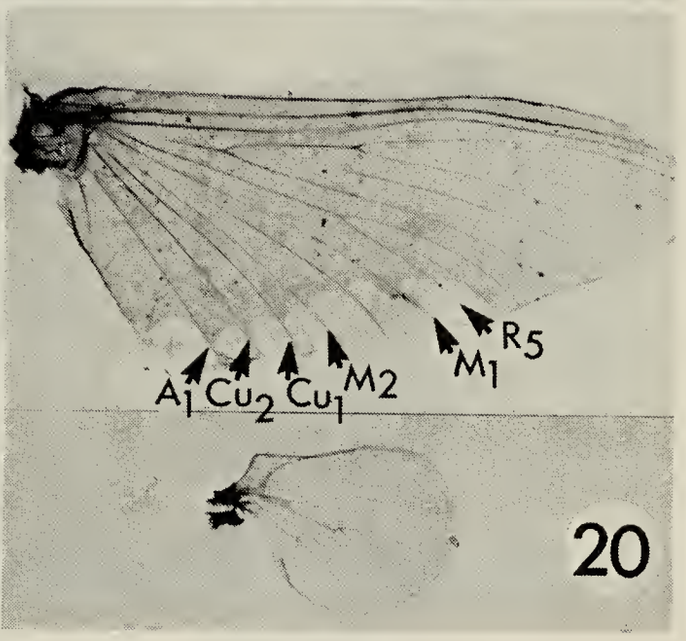
Siphlonuridae
- *Analetris eximia* Edmunds
- *Ameletus* spp.
- *Siphlonurus alternatus* (Say)
- *Isonychia sicca* (Walsh)

Tricorythodae
- *Tricorythodes* fallax Traver
- *Tricorythodes* sp.

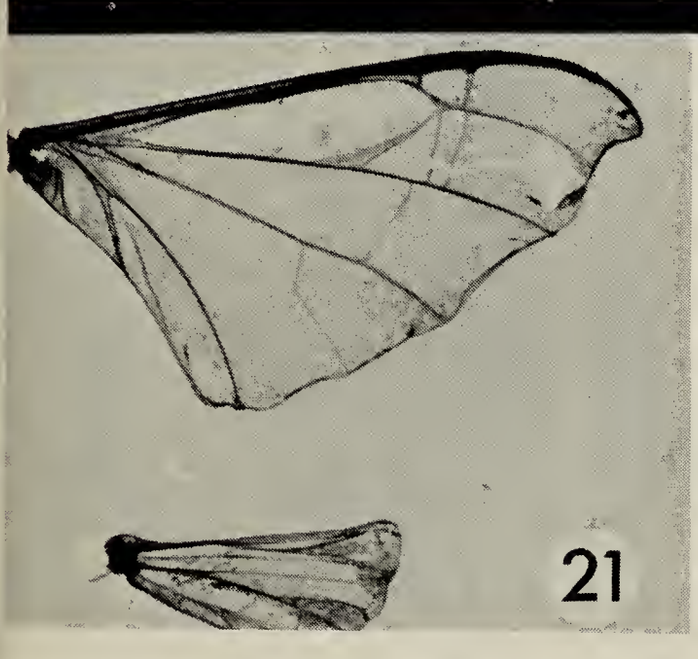








CATEGORY V. WITHOUT VEIN PAIRS (SEE IV) BUT WITH NUMEROUS VEINS ATTACHED TO INNER HIND ANGLE OF WING.



CATEGORY VI.

VENATION REDUCED TO 4 OR 5 LONGITUDINAL VEINS IN FRONT WING.

Figure 17. *Ephemerella;* Figure 18. *Leptophlebia;* Figure 19. *Siphlonurus;* Figure 20. *Baetisca;* Figure 21. *Lachlania.*

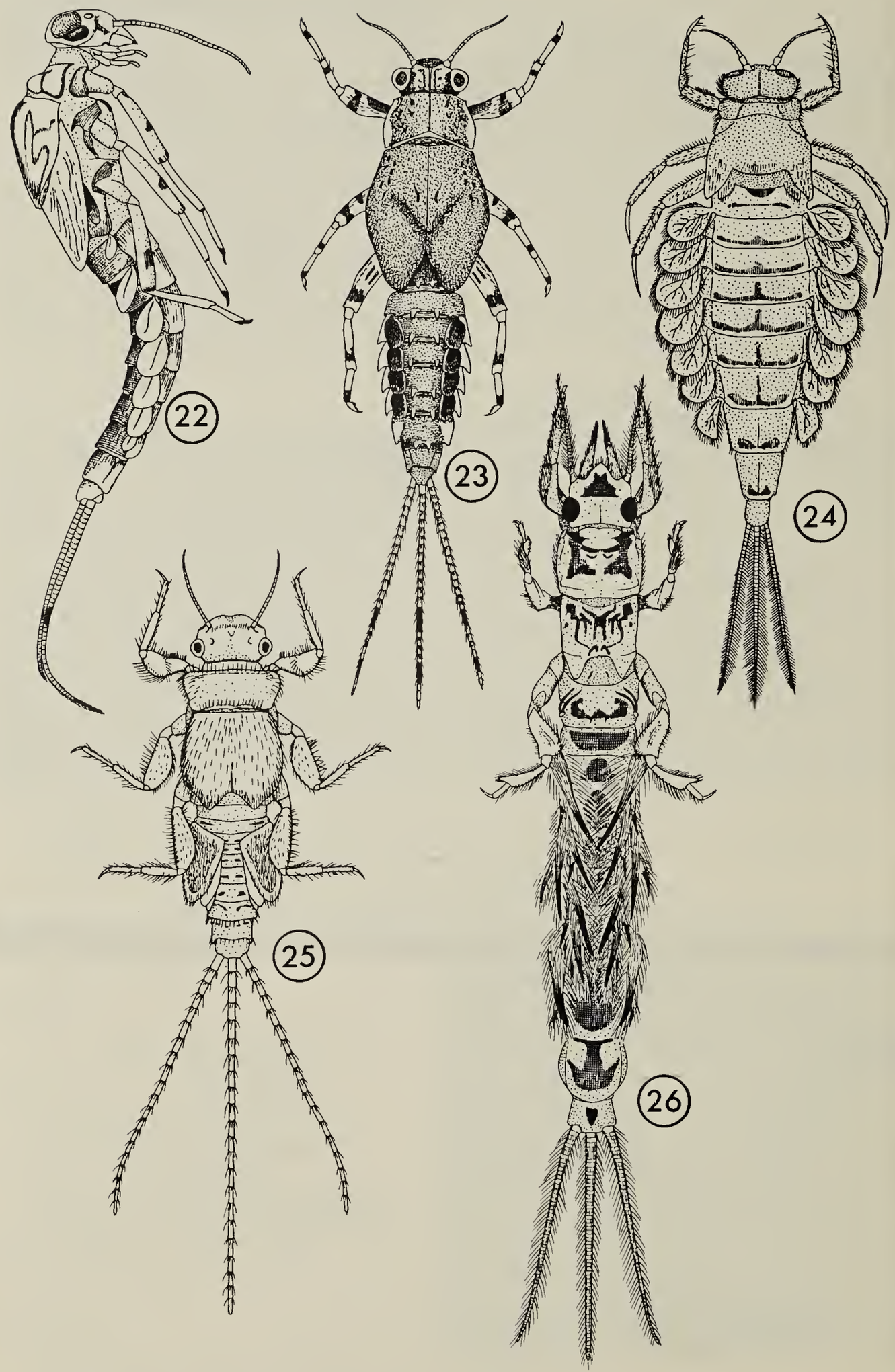


Figure 22. Nymph of Baetis; Figure 23. *Ephemerella;* Figure 24. *Ametropus;* Figure 25. *Tricorythodes;* Figure 26. *Hexagenia.*

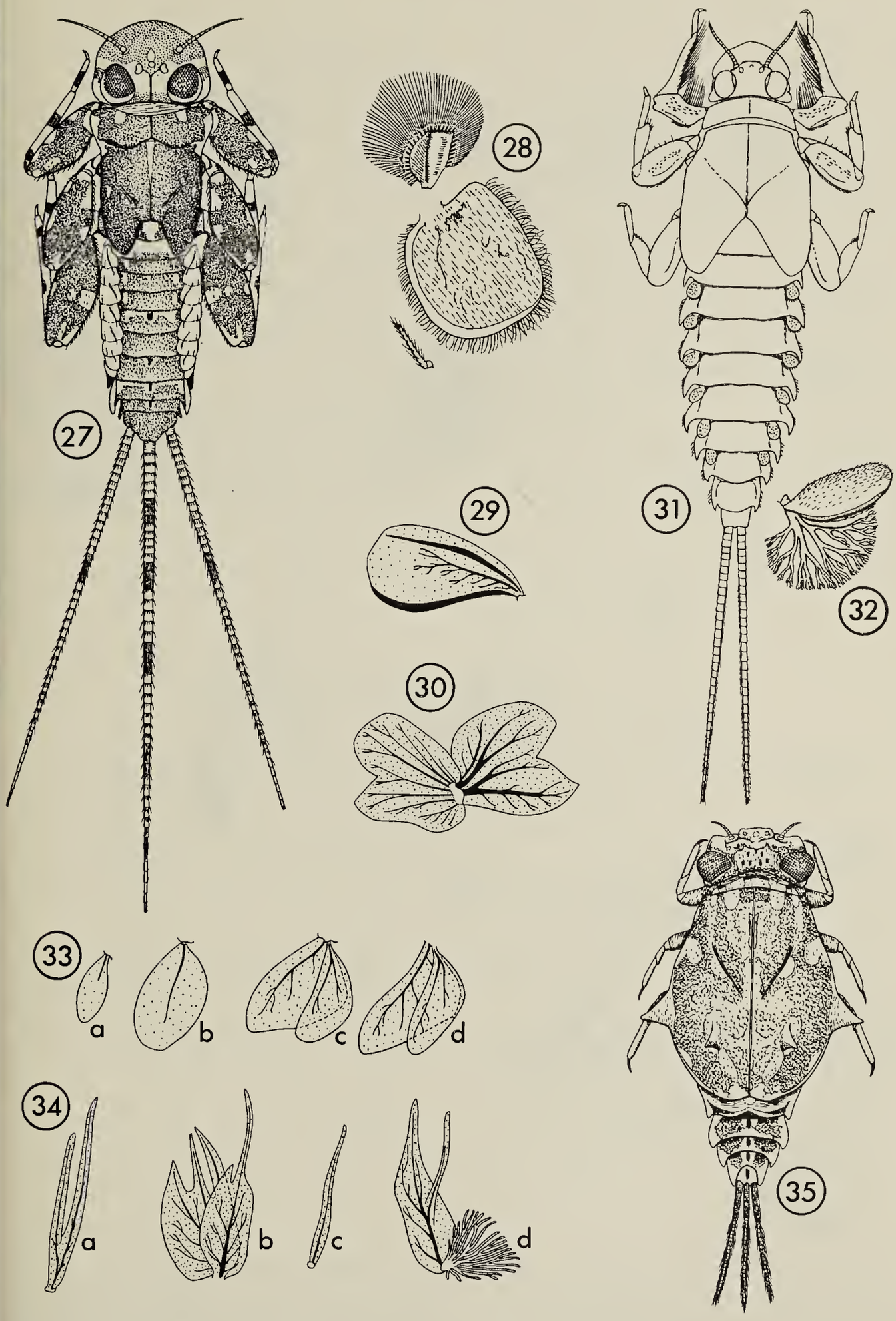


Figure 27. *Heptagenia*; Figure 28. Caenid type gill; Figure 29. Baetid type single plate gill; Figure 30. Double gill as in *Callibaetis*; Figure 31. *Lachlania*; Figure 32. gill of same; Figure 33. Transition from single to double gills as in *Baetidae*; Figure 34. Forked and double gills as in *Leptophlebiidae*; Figure 35. *Baetisca.*

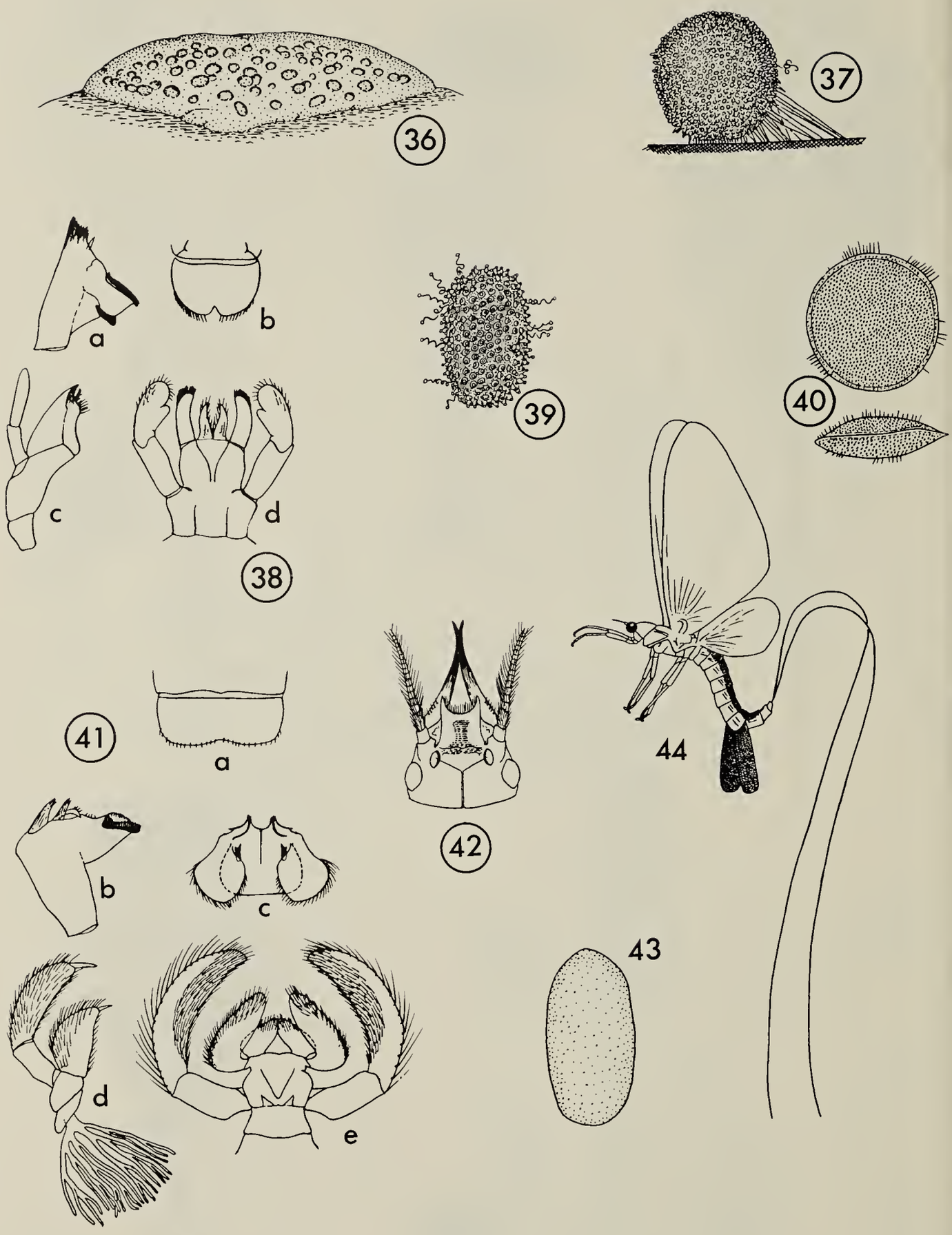


Figure 36. Mayfly eggs in gelatin mass, e.g., *Baetis*; Figure 37. Mayfly egg with attachment filaments; Figure 38. Nymphal mouthparts of chewing type, e.g., *Baetis*, a. mandible b. labrum, c. maxilla d. labium; Figure 39, 40. Mayfly eggs; Figure 41. Modified nymphal mouthparts; Figure 42. Modified tusk-like mandibles of *Ephemera*; Figure 43. Mayfly egg; Figure 44. Adult female with eggs.

ADDITIONAL READING

[1]ALLEN, R. K. and G. F. EDMUNDS, Jr. 1965. *A revision of the Genus Ephemerella (Ephemeroptera, Ephemerellidae). VIII. The subgenus Ephemerella in North America.* Misc. Publ. Ent. Soc. Amer. Vol. 4 No. 6: 244-282. (See also I-VII in this series, complete citation of each given in No. VIII).

[2]BURKS, B. D. 1953. *The Mayflies, or Ephemeroptera of Illinois.* Bull. Ill. Nat. Hist. Survey Vol. 26 No. 1: 216 pp.

[3]EDMUNDS, G. F., Jr. and R. K. ALLEN. 1957. *A checklist of the Ephemeroptera of North America north of Mexico.* Ann. Ent. Soc. Amer. 50: 317-324.

[4]LEHMKUHL, D. M. 1970. *Mayflies in the South Saskatchewan River: pollution indicators. Blue Jay* 28: 183-186.

[5]——— 1972. *Baetisca (Baetiscidae, Ephemeroptera) from the western interior of Canada, with notes on the life cycle.* Candian Journal of Zoology 50: 1015-1017.

[6]——— 1975a. *Saskatchewan Damselflies and Dragonflies. Blue Jay* 33: 18-27.

[7]——— 1975 b. *Alderflies. Blue Jay* 33: 152-154.

[8]——— 1975c. *Field guide to aquatic insect families. Blue Jay* 33: 199-219.

[9]——— In Press (1976) *Additions to the taxonomy, zoogeography, and biology of Analetris eximea (Acanthametropodinae: Siphlonuridae: Ephemeroptera).* Canadian Entomologist.

[10]LEWIS, P. A. 1974. *Taxonomy and ecology of Stenonema mayflies.* U.S. Environ. Prot. Agency — 6704-74-006. 80 pp.

[11]NEEDHAM, J. G., J. R. TRAVER, and YIN-CHI HSY. 1935. *The biology of Mayflies.* Comstock Publ. Co., Ithaca, New York.

[12]PETERS, W. L. and J. F. PETERS, eds. 1973. *Proceedings of the First International Conference on Ephemeroptera.* E. J. Brill, Leiden, Netherlands. 312 p.

* * * *

CORRECTION
Saskatchewan Damselflies and Dragonflies;

I have discovered an unfortunate error in the key to adult Dragonflies, *Blue Jay*, March, 1975, p. 25. Couplet 4 should read:

4a. Triagnle (T) of fore and hind wings about equally distant from arculus and similarly shaped (Fig. 28) 5

4b. Triangle more distant from arculus in fore wing than hind wing (Fig. 27) ..... **Common Skimmers** *(Libellulidae)*

I would also like to note the publication of Vol. 3 of Walker's Odonata of Canada and Alaska. All species of Canadian Odonata are now covered by this series:

WALKER, E. M. and P. S. CORBET, 1975. *The Odonata of Canada and Alaska. Libelloidea.* Vol. III, Univ. Toronto Press.

— Dennis Lehmkuhl

* * * *

BACTERIA FROZEN FOR AT LEAST 10,000 YEARS have been revived by researchers of the Darwin Research Institute, Dana Point, California. The bacteria may actually be as old as one million years and were found in core samples of permanently frozen ground from two sites in the McMurdo Sound region of Antarctica. Although only one of the bacteria samples began to grow into an unusual doughnut-shaped colony, both began moving when warmed and exposed to air.

From *Water Newsletter*, May 16, 1974.

RECENT CLUTCH SIZE DATA FOR WHOOPING CRANES, INCLUDING A THREE-EGG CLUTCH

E. KUYT, Canadian Wildlife Service, Ft. Smith, NWT. X0E 0P0

Bent in reporting clutch size in Whooping Cranes states: "The Whooping Crane lays ordinarily two eggs, occasionally only one and very rarely three . . ."[1] Novakowski, providing data for the Sass River portion of the Whooping Crane breeding range, found 37 clutches, one of which had a single egg, the other 36 two eggs each.[3]

During surveys over the Whooping Crane nesting area in northern Wood Buffalo National Park from 1966 to 1975 I collected data on clutch size and found them to be in agreement with Bent's generalization. Of 125 clutches I saw during that period, 104 (83.2%) contained two eggs, 12 (9.6%) had only a single egg and the contents of eight nests (6.4%) could not be determined due to the incubating bird's refusal to move off the nest. The remaining clutch (nest number 10/75) contained two eggs on 9 May 1975. A pair of Whooping Cranes was seen here on 5 May and 7 May but we were not able to find their nest until 9 May.

It has been our custom not to approach nesting whoopers *after* we have determined that the full clutch (usually two eggs) has been completed and until such time as egg collecting is contemplated. Hence the eggs were not observed between 9 May and 28 May, the day of egg pick-up. When our helicopter landed at the nest on that day, I found three eggs in the nest, the first three-egg clutch recorded from the Northwest Territories (see photo).

Although the nest was not visited between 9 and 28 May, under no condition should the three-egg clutch be interpreted as the result of "egg-dumping". My studies have shown that Whooping Cranes in the NWT breeding range are occupying well-defined nesting territories and after the initiation of nest building, the paired cranes do not tolerate other white-plumaged whoopers in their territory, at least until the young have reached flying stage and then only when the resident family is on the opposite side of its territory.[2]

By Lorne Scott

It appears only a single previous three-egg clutch is on record, a nest found in 1922 near Muddy Lake, Saskatchewan. One of the eggs in that clutch proved to be infertile but at least one of the other two hatched.[1]

I have 10 successive years' nesting data for many of the Whooping Crane pairs nesting in Wood Buffalo National Park but the pair occupying the territory where nest 10/75 was found, has nested there only infrequently and with indifferent success. In 1969 neither of the eggs hatched but in 1970 the pair produced two eggs and a single chick was later seen with the parents. In 1973 a single egg was produced and the chick observed on a later survey.

Ernie Kuyt and the Whooping Crane eggs — E. G. Bizeau

To our great disappointment, none of the 3 eggs from nest 10/75 hatched and no identifiable embryos were detected when the eggs' contents were examined.

Measurements of eggs are given below.

	10/75A	10/75B*	10/75C*
Length (mm)	105.0	101.5	103.2
Width (mm)	66.0	60.0	66.0
Weight in g (shell plus contents)	206.0	185.0	210.0
Weight in g (shell only)	26.1	—	—

*Data provided by R. Drewien, Idaho Cooperative Wildlife Research Unit.

[1]BENT, A. C. 1927. *Life histories of North American marsh birds.* U.S. Nat. Mus. Bull. 135. pp. 219-231.

[2]KUYT, E. 1975. *Nest site fidelity, productivity and breeding habitat of whooping cranes, Wood Buffalo National Park, Northwest Territories, Canada. In* Crane research round the world. International Crane Foundation. (in press)

[3]NOVAKOWSKI, N. S. 1966. *Whooping crane population dynamics on the nesting grounds, Wood Buffalo National Park, Northwest Territories, Canada.* C.W.S. Rept. Ser. No. 1. 20 pp.

* * * *

LOCAL BIRD NAMES. Lark Bunting: *Buffalo bird* (Man.); *prairie bobolink* (Its coloration, plumage changes, flight, and song are reminiscent of those of the bobolink. Sask.); *white-winged blackbird* (general). From *Folk-Names of Canadian Birds*, W. L. McAtee. Bull. 149. Nat. Mus. Canada. 1959.

BIRDS OF NORTH-CENTRAL MANITOBA, 1973

WAYNE C. WEBER, Department of Zoology, Mississippi State University, Mississippi State, Mississippi 39762

The birdlife of northern Manitoba is poorly known, except for the well-studied Churchill area, whose ornithology has been reviewed by Jehl and Smith.[10] Away from Churchill, only a few important publications have appeared, notably those of Copland and Smith[3], Davis[4], Godfrey[6], Johnson[11], Manning[12], and Mowat and Lawrie.[13]

During June 1973, accompanied by Chris Schmidt, I visited north-central Manitoba during a study to assess the impact on wildlife of the proposed Churchill-Nelson power project. We were based at Thompson from June 9 to 21, and at Southern Indian Lake from June 22 to 29. We carried out several aerial waterfowl surveys along the Burntwood, Rat and Churchill Rivers and around Southern Indian Lake; we also surveyed parts of the lake by boat.

Although Johnson[11] in 1970 published an account of birds in the Thompson area, I know of no previously published bird observations from Southern Indian Lake. Field work in the latter area revealed the presence of several unexpected bird species, most notably Ring-billed Gulls and Caspian Terns, which bred at the lake.

Itinerary. Geographic names used below are those found on the 1:250,000 maps of the National Topographic Series except where otherwise noted (see map).

June 9. Arrived at Thompson.

June 11. Visited Ospwagan Lake (55° 35'N, 98° 03'W), 14 miles SW of Thompson.

June 14. Aerial survey of Burntwood River from Split Lake (56° 08'N, 96° 33'W) to Wuskwatim Lake (55° 34'N, 98° 33'W).

June 15. Aerial survey of Burntwood River, Wuskwatim Lake to Threepoint Lake (55° 42'N, 98° 57'W) and Rat River, Threepoint Lake to Issett Lake (56° 37'N, 99° 08'W).

June 17. Aerial survey of upper Rat River and around perimeter of Southern Indian Lake.

June 19. Visited small lake on Wapishtigau Brook, hereafter called "Wapishtigau Lake" (55° 33'N, 98° 11'W), 18 miles SW of Thompson.

June 20. Aerial survey of Churchill River, Missi Falls (57° 22'N, 98° 07'W) to Billard Lake (57° 20'N, 96° 09'W).

June 22. Moved to Manitoba Hydro camp near Missi Falls (57° 20'N, 98° 08'W).

June 23. Boat survey of Southern Indian Lake near Missi Falls.

June 24. Boat survey of small lake on Churchill River below Missi Falls.

June 26. Moved to island in Kame Hills area, Southern Indian Lake (57° 31'N, 98° 33'W). Boat surveys of adjacent areas.

June 27. Boat survey up Muskwesi River to near Moss Lake (57° 39'N, 98° 40'W).

June 28. Boat survey of Sand Island area, Southern Indian Lake.

June 29. Returned to Thompson.

June 30. Left Thompson for Winnipeg.

Physiography and vegetation of the area. North-central Manitoba is a typical part of the Canadian Shield, with an irregular topography and an abundance of lakes and bogs (Fig. 1). Altitudes are mainly between 600 and 1100 feet.

The area lies within the Nelson River, Northern Coniferous, and

South Indian Lake area in north-central Manitoba.

Figure 1. Aerial view of Missi Falls, where Southern Indian Lake drains into the Churchill River.

Northwestern Transition Sections of the Boreal Forest Region as described by Rowe.[17] Black spruce (*Picea mariana*) is the dominant tree throughout the region, especially on boggy soils (where it is associated with tamarack, *Larix laricina*), but also on the uplands. White spruce (*Picea glauca*) forms good stands in river valleys and around lakes, where soils are better. In the southern part, successional stands of jack pine (*Pinus banksiana*), trembling aspen (*Populus tremuloides*), and white birch (*Betula papyrifera*) cover sizable areas. Balsam poplar (*Populus balsamifera*) and small willows (*Salix* spp.) are also common along rivers. Extensive forest fires in the recent past have left large areas covered only with small aspens and birches or standing, burnt snags. Marshes dominated by bulrushes (*Scirpus* spp.) and sedges (*Carex* spp.) border many lakes and streams; however, productive marshes with cattails (*Typha latifolia*) are rare.

Around the north of Southern Indian Lake, conditions are different. The uplands are covered by a park-like subarctic woodland of black spruce with a thick lichen ground cover. A dense forest of black spruce, white spruce and white birch prevails near lakes (Fig. 2). Jack pine, trembling aspen, and balsam poplar are scarce and recently-burned areas are few.

The vegetation of the area has been described in detail by Ritchie.[15,16]

Species account. Records of the 90 bird species observed are summarized below. Some evidence of breeding was obtained for 14 species, which are indicated with an asterisk; positive breeding records (nests or small young) were obtained for 10 of these. Names of bird species follow the American Ornithologists' Union.[1,2]

COMMON LOON. One each at Wuskwatim Lake, June 14 and Fidler Lake (57° 12'N, 96° 56'W), June 20; two on the upper Rat River, June 17. Common on Southern Indian Lake (e.g. four pairs near Missi Falls, June 23; eight birds in the Sand Island area, June 28).

AMERICAN BITTERN. One heard on the Muskwesi River near Moss Lake, June 27.

WHISTLING SWAN. Two flying down the Burntwood River east of Thompson, June 14; one at the north end of Karsakuwigamak Lake (56° 24'N, 99° 26'W), June 15 and 17. These were undoubtedly post-migratory stragglers.

Figure 2. Mixed spruce-birch forest along lakeshore near Missi Falls.

*CANADA GOOSE. Three on the Burntwood River below Thompson, June 14, and 13 around Southern Indian Lake, June 17. Common along the Churchill River from Missi Falls to Billard Lake, a well-known Canada Goose breeding ground (50 seen from the air, June 20). A pair with three goslings near Missi Falls Hydro camp, June 25.

*MALLARD. Fairly common everywhere; maximum count 45 along the lower Muskwesi River, June 27. A female with a brood of 8 near Missi Falls camp, June 25.

BLACK DUCK. One drake identified from the air at the confluence of the Odei and Burntwood Rivers east of Thompson, June 14. Although Black Ducks are not known to breed in north-central Manitoba, they may well do so; breeding has been recorded in southern Manitoba and in the Churchill area.[7, 10]

PINTAIL. A few along the upper Rat River and around Southern Indian Lake, with a maximum of 5 along the Muskwesi River, June 27.

GREEN-WINGED TEAL. Three near the Thompson airport, June 20, and a few on the upper Rat River and on Southern Indian Lake (maximum 4 near Missi Falls, June 23).

AMERICAN WIGEON. A few along the upper Rat River and the Churchill River. Commonest dabbling duck around Southern Indian Lake (88 along the Muskwesi River, June 27).

RING-NECKED DUCK. A pair on a lake in the Kame Hills area (57° 27'N, 98° 39'W), June 26.

GREATER SCAUP. Two positive observations: three near the mouth of the Muskwesi River, June 26, and three in the same area June 27. All were males, and were identified by rounded (not peaked) head shape and green (but not violet) iridescence on the head.

*LESSER SCAUP. Fairly common throughout the area; most scaup which could be identified were this species. On June 28, about 60 were flushed from a small island, supporting a gull and tern colony, near Sand Island on Southern Indian Lake, and two nests (with 9 and 10 eggs) were found in grass clumps.

COMMON GOLDENEYE. Small numbers seen in widespread areas, but common especially near Missi Falls camp, where flocks flew up the river each evening to roost on Southern Indian Lake (maximum 118 on June 23).

BUFFLEHEAD. Two on Karsakuwigamak Lake, June 17.

WHITE-WINGED SCOTER. Flocks of unidentified scoters were seen at Wuskwatim Lake, Wapishtigau Lake, on the Churchill River, and at several points on Southern Indian Lake (90 near Missi Falls, June 17). White-wings were positively identified at Karsakuwigamak Lake (3, June 17); Northern Indian Lake (5, June 20); and around Southern Indian Lake

(maximum 17 just below Missi Falls, June 24).

SURF SCOTER. Positively identified only at Southern Indian Lake (maximum 20 just below Missi Falls, June 24).

COMMON MERGANSER. Widespread in small numbers, but especially abundant along the Churchill River, where 931 (mostly males) were counted June 20, mainly in four stretches of rapids on the river; 435 were in one stretch below Missi Falls. On June 17, 546 were seen around Southern Indian Lake, including 368 just below Missi Falls.

GOSHAWK. One near Loon Narrows, Southern Indian Lake, June 17; one along the Muskwesi River, June 27.

RED-TAILED HAWK. One adult near Missi Falls camp, June 24; one in the Kame Hills area, June 26. None seen near Thompson.

*BALD EAGLE. Fairly common on larger lakes and rivers. One on a nest on northern Rat Lake (56° 13'N, 99° 37'W), June 15; one on the upper Rat River and 7 (6 adults) around Southern Indian Lake, June 17; and 5 along the Churchill River, June 20. On June 23, a pair of adults circled a nest on Southern Indian Lake near Missi Falls; and on June 24, two nests were seen on an island just below Missi Falls, but no birds were seen there.

Whitfield et al.[20] have recently documented a high breeding density of Bald Eagles in adjacent regions of central Saskatchewan and Manitoba.

MARSH HAWK. One female at the south end of Wuskwatim Lake, June 14.

OSPREY. One on the upper Rat River and another near the north end of Southern Indian Lake, June 17; two (probably a pair) near the mouth of the Muskwesi River, June 27.

AMERICAN KESTREL. Common in the Thompson area; 7 seen June 11 in various localities around the city.

RUFFED GROUSE. Two heard drumming June 11 near the Thompson golf course.

KILLDEER. A few around Thompson (3 at the airport, June 16) and a pair near Missi Falls camp, June 25.

COMMON SNIPE. Fairly common around Thompson (8 heard and seen at the airport, June 16); one heard near Missi Falls camp, June 24.

SPOTTED SANDPIPER. Fairly common everywhere; maximum 4 near Missi Falls camp, June 23.

Spotted Sandpiper Fred Lahrman

SOLITARY SANDPIPER. A pair seen on the Burntwood River at Thompson, June 11, and one near the Thompson airport, June 20; heard at Wapishtigau Lake, June 19.

*LESSER YELLOWLEGS. One heard at Thompson, June 10. On June 27, at least 8 were seen along the lower Muskwesi River; they were probably nesting, since they circled our boat, calling excitedly.

PARASITIC JAEGER. One bird, a typical light-phase adult, was seen June 27 on northwestern Southern Indian Lake. It briefly chased two Caspian Terns, then landed on the water, allowing us to approach within 25 feet before flying off. Presumably this was a non-breeder or straggler from the north.

*HERRING GULL. Common on Southern Indian Lake, but less so than the Ring-billed Gull. One colony on a small willow-covered island near Missi Falls (57° 22'N, 98° 10'W), visited June 23, had 32 nests with eggs, one of which also contained a newly-hatched chick. Another nearby colony, found the same day on a rocky reef in the lake (57° 20'N, 98° 11'W), included a few pairs of Herring Gulls together with about 150 pairs of Ring-bills. Two Herring Gull nests in this colony had chicks, which in one nest were about 8 to 10 days old, although none of the Ring-bill eggs had hatched yet. A third Herring Gull colony, visited June 28, was on a small rocky islet near Sand Island, Southern Indian Lake (57° 29'N, 98° 28'W). It included 8 pairs, at least 6 of which had young on that date. Thus it appears that Herring Gulls start nesting earlier than Ring-bills at Southern Indian Lake, as Vermeer has found farther south in Manitoba.[19]

Figure 3. Reef in Southern Indian Lake near Missi Falls. Several pairs of Herring Gulls and about 150 pairs of Ring-billed Gulls nested here.

A few gulls, most of which were believed to be Herring, were seen regularly at Thompson.

*RING-BILLED GULL. This was the commonest nesting gull on Southern Indian Lake. Two large colonies on the lake near Missi Falls were visited June 23. One, the mixed Herring and Ring-bill colony mentioned above (Fig. 3), had about 150 Ring-bill nests, including 4 with 4 eggs. The second colony, on an islet near the first but closer to shore (57° 20'N, 98° 09'W), had 353 Ring-bill nests, of which one had 5 eggs (unusual for the species) and 6 had 4 eggs. Only 4 nests had hatched one or more chicks.

A third Ring-bill colony near Sand Island (57° 32'N, 98° 25'W), which also included Common and Caspian Terns, was checked June 28. It had 158 nests, all with 1 to 3 eggs.

In addition to the five gull colonies on Southern Indian Lake checked on the ground, five others were seen from the air, but the species could not be determined. These were located at 57° 06'N, 98° 20'W; 57° 39'N, 98° 17'W; 57° 40'N, 98° 11'W; 57° 24'N, 98° 29'W; and 57° 26'N, 98° 16'W. At least the first two of these also included Common Terns. Even these 10 colonies, however, may represent less than half the colonies on the lake. Another gull colony (about 15 pairs) was seen June 14 on Apussigamasi Lake (55° 52'N, 97° 34'W), on the Burntwood River below Thompson.

One Ring-bill was seen June 30 at Thompson.

Godfrey lists Moose Lake, near The Pas, as the northern-most Manitoba nesting locality for the Ring-billed Gull.[7] The colonies on Southern Indian Lake represent either a recent range extension of about 250 miles or, more likely, a long-established but previously unknown nesting population.

*BONAPARTE'S GULL. Widespread but local. Ten birds, and at least 3 nests (in black spruces), June 19 at Wapishtigau Lake; 8 birds along the upper Rat River, June 17; 4 at Billard Lake, June 20; and 12 along the Muskwesi River, June 27.

*COMMON TERN. Four at Ospwagan Lake, June 11; there appeared to be a colony here on a small rocky island, but the birds on the island were too distant for positive identification. Common Tern colonies were seen from the air on Southern Indian Lake (about 56° 54'N, 99° 00'W) and Fidler Lake (57° 10'N, 96° 58'W). See Ring-billed Gull for three mixed gull-tern colonies. Only one Common Tern colony was checked on the ground — the mixed gull-tern colony near Sand Island, Southern Indian Lake (57° 32'N, 98° 25'W), visited June 28. This colony had 92 Common Tern nests with 1 to 3 eggs, plus what appeared to be many empty nests of this species (often hard to tell Common Tern nests from Ring-billed Gull nests without eggs!).

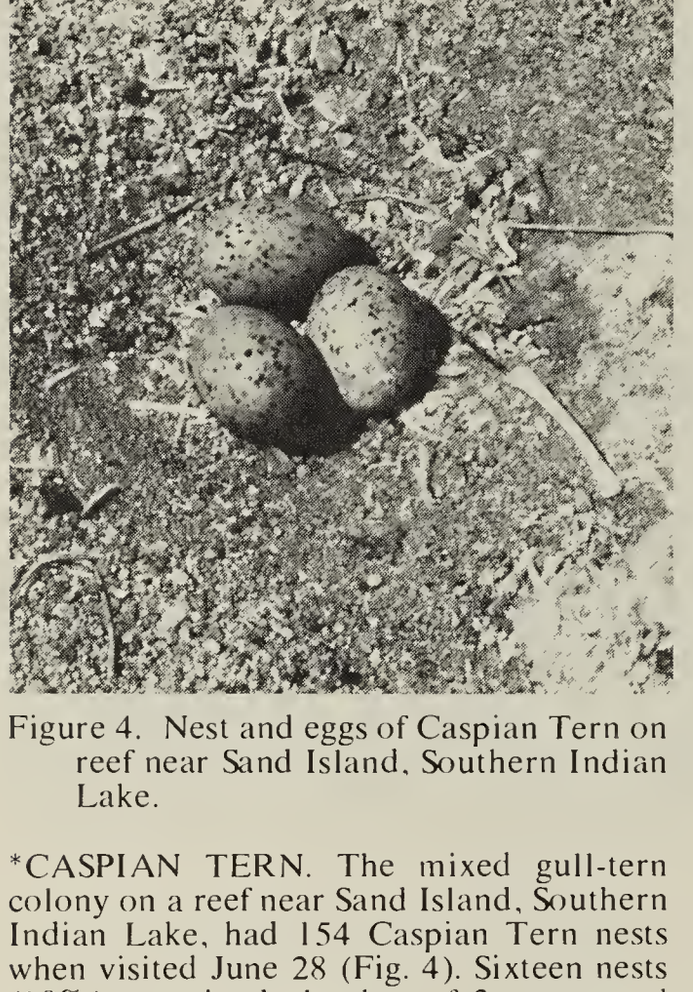


Figure 4. Nest and eggs of Caspian Tern on reef near Sand Island, Southern Indian Lake.

*CASPIAN TERN. The mixed gull-tern colony on a reef near Sand Island, Southern Indian Lake, had 154 Caspian Tern nests when visited June 28 (Fig. 4). Sixteen nests (10%) contained clutches of 3, compared with only 2% at a colony on Lake Winnipegosis.[5] The Caspian Terns nested on a bare sand flat near the centre of the reef, while the Common Terns and Ring-billed Gulls nested mainly among the rocks and grass clumps on the periphery. Caspian Terns were seen flying and diving for fish at several other points around Southern Indian Lake, and it seems likely that there are more colonies on the lake.

This record extends the breeding range at least 250 miles northward from previously reported colonies on Gods Lake[8] and Moose Lake[18], Manitoba.

*BLACK TERN. Several on June 14 and 19 at Wapishtigau Lake near Thompson; 13 (probably a nesting colony) at the south end of Wuskwatim Lake, June 14; 2 at the mouth of the Suwanee River on Rat Lake, June 15; and 7 on the upper Rat River (between Karsakuwigamak and Issett Lakes), June 17.

GREAT HORNED OWL. Two heard hooting near the Thompson golf course, June 11.

COMMON NIGHTHAWK. Common around Thompson; one heard June 22 at Missi Falls camp.

BELTED KINGFISHER. Recorded at Thompson, June 17, 20 and 22; also at Missi Falls camp on June 22 (3 birds), 23 and 24 (one bird each). Missi Falls is well north of the known breeding range, but the species has also been recorded at Fort Hall Lake in extreme northwestern Manitoba.[13]

*COMMON (YELLOW-SHAFTED) FLICKER. Fairly common both at Thompson and around Southern Indian Lake. On June 24, a pair was seen entering a nest-hole 20 feet up in a dead birch stub near Missi Falls camp.

YELLOW-BELLIED SAPSUCKER. One in an aspen grove at Thompson, June 12 and 22.

BLACK-BACKED THREE-TOED WOODPECKER. Two males at Ospwagan Lake, June 11.

EASTERN KINGBIRD. One heard at Wapishtigau Lake, June 19, and another at a pond near the Thompson airport, June 20.

YELLOW-BELLIED FLYCATCHER. Two heard singing and seen in small spruces near the Thompson cemetery June 10 and June 30.

ALDER FLYCATCHER. Common both around Thompson (10 at Thompson airport, June 20) and around Southern Indian Lake (5 near Missi Falls camp, June 24).

LEAST FLYCATCHER. Common around Thompson (e.g., 15 on June 11); none seen elsewhere. Mainly in aspen groves.

OLIVE-SIDED FLYCATCHER. One heard singing at Wapishtigau Lake, June 19, and one near the Thompson airport, June 20.

TREE SWALLOW. Fairly common around Thompson; less so at Southern Indian Lake (3 at Missi Falls camp, June 24).

BANK SWALLOW. One or two recorded at Thompson, June 10, 11 and 16, mostly along the Burntwood River.

BARN SWALLOW. A few around Thompson, mainly at the airport.

CLIFF SWALLOW. Recorded only at Thompson, June 9 and 6 on the 10th.

*GRAY JAY. Fairly common at both Thompson and Southern Indian Lake. A family group of 5, of which at least 3 were juveniles, was seen June 11 at Thompson.

COMMON RAVEN. Common everywhere; maximum count 40 on June 24 at the garbage dump near Missi Falls camp.

COMMON CROW. Recorded at Thompson (up to 12 birds) and also around Southern Indian Lake (4 at Missi Falls camp, June 24), but much less numerous everywhere than the Raven.

BOREAL CHICKADEE. A pair near Missi Falls camp, June 25.

BROWN CREEPER. One heard June 11 at Ospwagan Lake; Johnson also had one record at Thompson.[11]

AMERICAN ROBIN. Common at all localities visited.

HERMIT THRUSH. Common around Thompson (e.g., 6 on June 11); none seen elsewhere.

SWAINSON'S THRUSH. Abundant both at Thompson (15 on June 11) and Southern Indian Lake (15 around Missi Falls camp, June 24).

RUBY-CROWNED KINGLET. Fairly common both around Thompson and at Southern Indian Lake.

CEDAR WAXWING. One seen at Thompson, June 20, and several June 30.

*STARLING. One seen at the Thompson float-plane base, June 12, 19 and 30. Nesting was suspected, since the bird gave the usual scolding call directed at intruders near a Starling nest but no nest was found. Johnson[11] saw Starling three times at Thompson without evidence of nesting.

SOLITARY VIREO. Two heard singing near the Thompson golf course, June 30.

RED-EYED VIREO. Fairly common at Thompson; also heard singing at Ospwagan Lake (2, June 11) and South Indian Lake village (1, June 17), but not recorded around the northern part of Southern Indian Lake. Restricted to aspen groves.

TENNESSEE WARBLER. Abundant; possibly the commonest bird in the area (10 at the Thompson airport, June 16; 22 around Missi Falls camp, June 24; 7 along the Muskwesi River, June 27).

YELLOW WARBLER. Common both at Thompson and at Southern Indian Lake (10 around Missi Falls camp, June 24); found mainly in shrubbery near lakes and streams.

MAGNOLIA WARBLER. Fairly common in appropriate habitat (second-growth mixedwoods) around Thompson (8 near golf course, June 11). Also recorded at Ospwagan Lake (1, June 11) and Missi Falls camp (up to 3, June 23 to 25).

YELLOW-RUMPED (MYRTLE) WARBLER. Fairly common at both Thompson and Southern Indian Lake (5 around Missi Falls camp, June 24).

BLACKPOLL WARBLER. Found only at Missi Falls camp, but common there (8 on June 24), in open spruce forest.

OVENBIRD. Heard singing near the Thompson golf course on June 11, 29 and 30 (3 on the 11th); only in deciduous stands.

NORTHERN WATERTHRUSH. Fairly common along edges of lakes and streams both at Thompson and around Missi Falls camp (3 on June 25).

WILSON'S WARBLER. Uncommon around Thompson (one each on June 18 and 30) and Missi Falls camp (one on June 24).

HOUSE SPARROW. A flock of about 6 birds was consistently present around the Plaza shopping centre in Thompson. None was seen in residential areas of the city.

RED-WINGED BLACKBIRD. Recorded at the Thompson airport, June 16 and 20 (8 on the 20th); the Thompson dump (1, June 17); Wapishtigau Lake (1, June 19); and along the Muskwesi River (at least 10, all males, at scattered points, June 27).

RUSTY BLACKBIRD. One along the Muskwesi River, June 27, and 2 probable Rusty Blackbirds along the shore of Southern Indian Lake nearby, June 26.

COMMON GRACKLE. Three at Wapishtigau Lake, June 19; 4 at the Thompson airport, June 20; and 1 in Thompson, June 21.

PINE SISKIN. One heard June 29 at the Kame Hills camp, Southern Indian Lake, and about 6 seen near Thompson, June 30. Although Southern Indian Lake is far north of the known breeding range, there have been other far northern sightings at Churchill[10] and Lynn Lake, Manitoba[9] and at Reindeer Lake, Saskatchewan.[14]

RED CROSSBILL. About 5 heard among flocks of White-winged Crossbills near the Thompson cemetery, June 30.

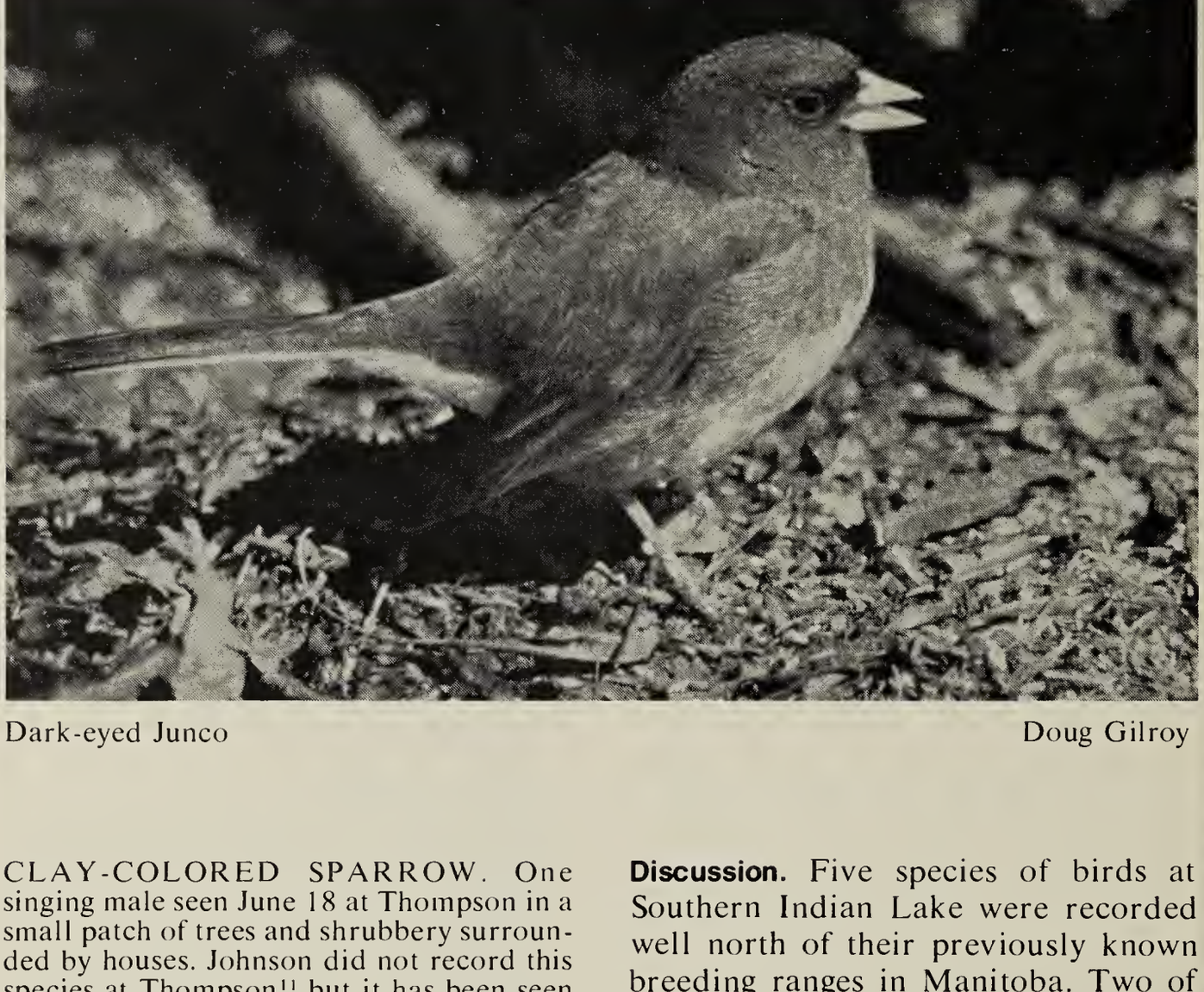
WHITE-WINGED CROSSBILL. Several flocks, totalling about 50 birds, seen near Thompson, June 30. White-winged Crossbills, Red Crossbills and Pine Siskins all arrived at once; none were seen around Thompson between June 9 and 22.

SAVANNAH SPARROW. A few seen and heard at several points around Thompson, including vacant land within the city.

VESPER SPARROW. One heard singing in a vacant lot in Thompson, June 18. Johnson found a nest at Thompson.[11]

DARK-EYED (SLATE-COLORED) JUNCO. Common around Thompson, and perhaps even more so at Southern Indian Lake (9 around Missi Falls camp, June 23).

CHIPPING SPARROW. One of the commonest birds at all localities visited, especially at Thompson (10 on both June 10 and 11).



Dark-eyed Junco Doug Gilroy

CLAY-COLORED SPARROW. One singing male seen June 18 at Thompson in a small patch of trees and shrubbery surrounded by houses. Johnson did not record this species at Thompson[11] but it has been seen at Churchill[10] and Nero observed a male on territory at Hasbala Lake in extreme northeastern Saskatchewan.[14]

WHITE-CROWNED SPARROW. Fairly common in shrubbery at Southern Indian Lake (3 at Missi Falls, June 24). One heard singing at Thompson, June 30.

WHITE-THROATED SPARROW. Fairly common at both Thompson and Southern Indian Lake (4 around Missi Falls camp, June 24).

FOX SPARROW. One heard singing in lakeside shrubbery at Missi Falls camp on June 23 and one on June 25.

LINCOLN'S SPARROW. Fairly common around Thompson and heard singing at Wapishtigau Lake, June 19. Two heard singing near Missi Falls camp, June 24.

SWAMP SPARROW. Common in appropriate habitat (swampy willow thickets) at Thompson (10 at Thompson airport, June 20); one heard singing at Missi Falls camp on both June 23 and 24.

SONG SPARROW. Fairly common in streamside and lakeside shrubbery at Southern Indian Lake (4 near Missi Falls camp, June 23); uncommon at Thompson.

Discussion. Five species of birds at Southern Indian Lake were recorded well north of their previously known breeding ranges in Manitoba. Two of these (Ring-billed Gull and Caspian Tern) definitely nested and two others which were seen frequently or in good numbers (Belted Kingfisher and Red-winged Blackbird) probably did so. The fifth species, Pine Siskin, is an erratic wanderer and may not nest at Southern Indian Lake, although it probably does so at Thompson.[11]

In addition, although each was seen only once, the Black Duck and Clay-colored Sparrow may nest in the Thompson area (which is well to the west and north, respectively, of their currently-recognized breeding ranges as mapped by Godfrey[7]). The record of a Vesper Sparrow at Thompson supports Johnson's nest record,[11] and, together with reports of Vesper Sparrows from Pikwitonei[3] and Lynn Lake[9], suggests that this species may be a regular breeder farther north than formerly thought.

It is unlikely that any of the records listed above represent recent range extensions (except, perhaps, for the Vesper Sparrow); none of the species involved is known to be increasing its numbers or expanding its range in nearby areas.

Records of several other species which are at or near their northern range limits are also worth noting. These include Ring-necked Duck, Red-tailed Hawk and Magnolia Warbler at Southern Indian Lake; and Black Tern, Yellow-bellied Sapsucker, Eastern Kingbird, Barn Swallow, Brown Creeper, Starling, Solitary and Red-eyed Vireos, Ovenbird and Red Crossbill at Thompson and along the Burntwood River.

My impressions of the abundance of birds around Thompson differ from those of Johnson for several species.[11] I considered Swainson's Thrush and Tennessee Warbler abundant; Alder and Least Flycatchers and Hermit Thrush, common; and Red-eyed Vireo and Magnolia Warbler, fairly common. In contrast, Johnson listed all of these as "uncommon" or "rather uncommon". One reason for this discrepancy may be that Johnson's observations were confined to within a 3-mile radius of Thompson, and he may have been unable to visit as wide a range of habitats as I. Also, the severe late spring snowstorms in 1969 mentioned by Johnson may have drastically reduced numbers of insectivorous birds such as thrushes, vireos and warblers.

There were notable differences in avifauna between Thompson and the northern part of Southern Indian Lake. Several species which probably breed regularly at the former locality were not recorded at the latter. These include Black Tern, Yellow-bellied Sapsucker, Eastern Kingbird, Least Flycatcher, Barn Swallow, Brown Creeper, Starling, Solitary and Red-eyed Vireos, Ovenbird, Common Grackle and Vesper Sparrow. At least three of these (Yellow-bellied Sapsucker, Least Flycatcher and Red-eyed Vireo) are closely associated with aspen groves, which were virtually nonexistent around the north end of Southern Indian Lake.

Barn Swallow Fred Lahrman

Southern Indian Lake has a distinct subarctic element in its avifauna. At least three species of northern affinities — the Blackpoll Warbler, White-crowned Sparrow and Fox Sparrow — occur and presumably breed around the northern part of the lake, but are absent or rare at Thompson. However, as Nero points out, all three of these species do occur south of the true subarctic zone of spruce-lichen woodland ("Hudsonian Zone" of C. Hart Merriam) in northeastern Saskatchewan.[14] Species which are restricted to the subarctic zone (e.g., Gray-cheeked Thrush, Northern Shrike, Common Redpoll, Tree Sparrow and Harris's Sparrow) were not observed at Southern Indian Lake, although they do occur farther north at Nueltin Lake on the Manitoba-Keewatin boundary.[13]

Thus Southern Indian Lake, judging by its birds, appears to be on the southern edge of the subarctic zone, whereas Thompson has a typical boreal-forest avifauna.

Acknowledgements. The observations reported here were made while I was employed by F. F. Slaney & Co. of Vancouver, B.C., on a study to determine the impact on wildlife of the Churchill-Nelson power project of Manitoba Hydro. Chris Schmidt assisted in the field work. We thank the many persons who helped us in Manitoba, especially Garry Dickson and the crew of the Churchill Diversion Archaeological Project, who made us welcome during our stay at their camp in the Kame Hills area. Robert W. Nero offered several helpful suggestions for improving the manuscript.

Summary. Observations of 90 species of birds from north-central Manitoba, mainly from Southern Indian Lake and Thompson, are reported. Some breeding evidence was obtained for 14 species, including positive breeding records (nests or small young) for 10 species. Large colonies of Ring-billed Gulls and Caspian Terns were found at Southern Indian Lake, about 250 miles north of previously-known colonies. The Black Duck, Belted Kingfisher, Red-winged Blackbird, Pine Siskin and Clay-colored Sparrow were also found beyond the limits of their currently recognized breeding ranges. Southern Indian Lake, compared with Thompson, has a distinct subarctic element in its avifauna, although it lacks most of the typical subarctic species which occur farther north.

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[2]AMERICAN ORNITHOLOGISTS' UNION. 1973. *Thirty-second supplement to the American Ornithologists' Union check-list of North American birds.* Auk 90: 411-419.

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[13]MOWAT, F. M., and A. H. LAWRIE, 1955. *Bird observations from southern Keewatin and the interior of northern Manitoba.* Can. Field-Nat. 69:93-116.

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FISH-EATING ROBIN

By PATRICIA R. KERN,
1053 Chestnut Ave., Moose Jaw, Sask.

The winter of 1973-74 was a hard one in Western Canada, with very cold weather and deep snow. As a flood control measure the Moose Jaw city authorities had lowered the water level of Moose Jaw Creek. However, several small areas of the river remained open because of springs or water running swiftly over sand and gravel bars.

On January 10, 1974, a bright cold day, I drove through River and Wellesley Parks in the Moose Jaw Creek Valley in south Moose Jaw. Magpies and several Bohemian Waxwings were drinking from a small open spot in the stream. A Robin flew along, landed at the edge of the ice and dipped its head into the water to catch a small fish about 1-1/2" long from a school swimming in the open water. The Robin threw the fish onto the ice, picked it up and shook it, only to throw it down again three or four times before working it around in its beak so it could be swallowed headfirst. Several fish were caught and eaten on that occasion.

A number of residents in the immediate area, including Dr. H. V. Young, Mr. and Mrs. Wm. Gardner, and Mrs. Dorothy Campbell, observed the Robin using the same procedure in January and February. We all thought this behaviour was very unusual for a Robin, as its food ordinarily consists of 60% vegetation (fruits, berries and some grass and weed seeds) and 40% animal, such as beetles, caterpillars, earthworms, cutworms, ants, flies, grasshoppers and so forth.

However, this curious behaviour has been noted several times previously. In A. C. Bent's *Life histories of North American thrushes, kinglets, and their allies*, he quotes W. Michael's statement that in 1934 a number of Robins was seen feeding on stranded fish at Mirror Lake, Yosemite. Some spotted Robins plunged belly deep into the water to catch a fish while other birds were content to stand on the shore and pluck fish about 2" long when they came into shallow water. They tossed them out onto the beach, mangled them with their bills, beat them on the ground and otherwise softened them before attempting to swallow. Bent also reports that J. C. Phillips in 1927 reported a remarkable instance of Robins catching trout fry at the State Hatchery at Sutton, Mass.

The Moose Jaw Robin visited nearby yards in the next few months with the flock of waxwings. One was observed with a flock of waxwings a mile west along the river, and also one in the city on February 10. This might have been the same Robin as it was not observed at these times in River Park. The Robin apparently survived the harsh winter, perhaps due to its diet of berries and fish.

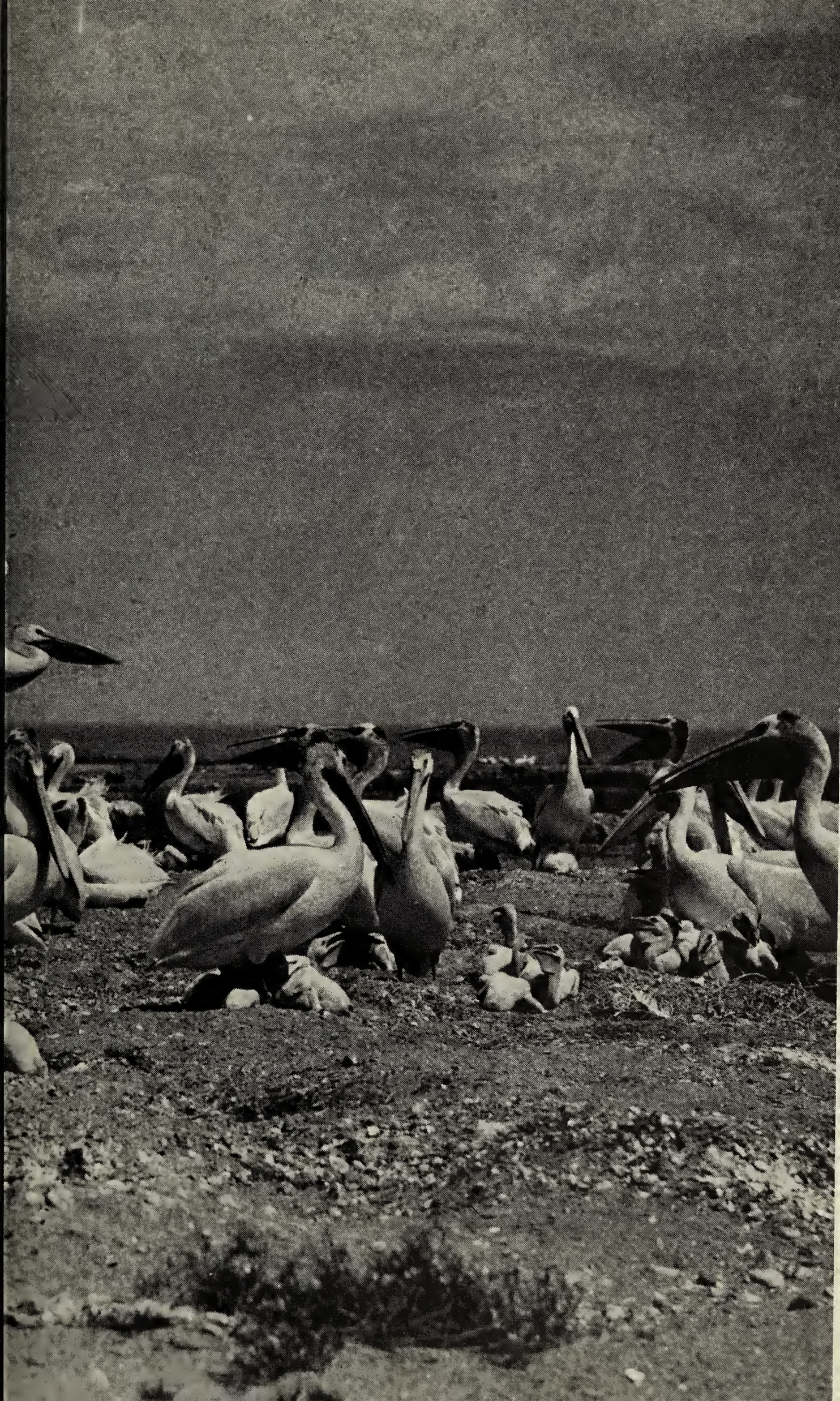
SIGHT RECORD OF THE SCISSOR-TAILED FLYCATCHER FOR SASKATCHEWAN

A. J. MacAULAY,
1651 - 11th Ave., Regina, Sask.

On August 26, 1975, my wife and I observed a Scissor-tailed Flycatcher hawking for insects from a telephone line in the Qu'Appelle Valley, about 4 miles west of Lumsden. The bird was under observation for 25 minutes, beginning at 2 p.m. at a distance of 35 to 45 yards. An excellent view was obtained through 7 x 50 Bushnell binoculars with excellent lighting conditions in hazy sunlight.

The only other sight record for the province was by Mrs. Jean Bradley at Milestone on September 24, 1970 (*Blue Jay* 29: 34, 1971).

Pelicans at Quill Lakes. Fred Bard



AN UNSUSPECTED OSPREY CONCENTRATION IN WEST-CENTRAL SASKATCHEWAN

FRANK SCOTT, Loon Lake, Sask., and
DAVID L. SURKAN, 425-24th St., West, Prince Albert, Sask.

During the spring and summer of 1975 a concentration of 15 nesting Osprey pairs was found in an area of approximately 15 townships (540 sq. mi.) west of Loon Lake in west-central Saskatchewan. All except one of the nests were found from light aircraft. The area involved was visited weekly by varying the route to a regularly scheduled medical clinic. The Piper Super Cub could be slowed to 60 mph low over shorelines, making nest spotting fairly easy. Counting eggs and young was much more difficult, especially as the young huddle together, so that the number of young reared is known only for those nests actually climbed. A nest was deemed to be active if adult Ospreys were regularly present at or near the nest. This was not a foolproof working definition for one nest, thought to be inactive when visited in June, contained young in late July, and two other nests that had anxious Ospreys in attendance at all times were empty when climbed.

On July 1, the Super Cub was leased to a commercial operator and effective surveillance virtually ceased. The weekly trips were now made in a Beech Bonanza, too fast and not sufficiently manoeuverable for our purpose, as a tragic accident was to prove. Normally, when we approached an Osprey nest with the Super Cub, one adult would leave the nest when we were up to a mile away, whilst the other adult usually sat tight on the nest as we passed within 150 to 200 feet. On the unfortunate day, the bird which left the nest early climbed up fairly high — and then dived at the Beech Bonanza. The aircraft was turned in an effort to avoid contact soon after the Osprey began to dive but the bird hit the propellor spinner, causing minor damage to the machine and the immediate death of the bird. (The remaining adult nevertheless managed to raise 2 young successfully).

This episode suggests caution, since the Osprey might well have hit the propellor or crashed through the windshield and thus caused the plane to crash. It is recommended that only aircraft flown at speeds comparable to that of the Osprey should be used in such survey work, so that the bird may avoid the plane. The speed of 120 to 150 mph no doubt was the decisive factor in what this Osprey obviously interpreted as a threat, since this nest had been visited several times annually with the slower Super Cub for about 10 years, without precipitating such an attack.

The senior author had known of 3 active Osprey nests for up to 10 years. There are also old and unused nests in the area. During the winter of 1974-75, 8 nests were discovered in groups in 3 locations, but the next June only 2 of the 8 were active. Both active and inactive nests tended to be in groups. In the summer of 1975, there were 3 groupings that might almost be called colonies: one group of 4 nests were all unused; another group of 3 nests were all active; a final group of 4 active and 2 unused nests were within a circle just exceeding 1/4 mile in diameter.

Twelve of the 15 nests were within 25 yards of the lakeshore, one was about 100 yards back, one was along a

Osprey F. Scott

creek and one was in a muskeg. Five nests were in live conifers, 2 in dying conifers, 2 in dead conifers, 5 in dying or dead populars, and one in a dying birch.

On July 26, Dr. C. Stuart Houston, Mary Houston, and Dick Ehman arrived on a banding expedition. Six of the most climbable and accessible nests were visited. One nest with young could not be reached since the top of the tree was dead; one inactive nest near an active nest tree was climbed in error and the mistake not recognized until a later aerial visit; one nest with anxious parents was empty and presumably had failed. Five young were banded in the remaining 3 nests: one bird about 70 ft. above ground in a live white spruce, another about 66 ft. in a live white spruce and three young 18 ft. up in a dead black poplar.

On October 17, 9 nests were visited by air one morning. At one nest, there was a dark Osprey, probably an immature, which kept returning as we circled the nest.

Not all probable habitat was visited by air in 1975 and, no doubt, additional Osprey nests remain undiscovered nearby. During the surveys, 3 colonies of 80, 40, and 15 Great Blue Heron nests were located, in addition to 2 sites with only 2 heron nests each.

This concentration of Osprey nests is without precedent in Saskatchewan. Apparently by extrapolation from early Osprey records in adjacent central Alberta, Loon Lake is within the Osprey breeding range map in Godfrey's *Birds of Canada (1966)*, but, without previous records, the area was excluded from Gollop's map in the *Atlas of Saskatchewan (1969)*.

A related fish-eating species, the Bald Eagle, generally shares the Osprey's range elsewhere in Saskatchewan, but in greater numbers. Aerial surveys for Bald Eagle nests in east-central Saskatchewan by D. W. A. Whitfield and J. M. Gerrard located nearly 10 Bald Eagle nests for each Osprey nest found. In contrast, we know of only one Bald Eagle nest in the region, at a lake 30 miles north of our study area, visited by the senior author in 1972.

In conclusion, the Loon Lake area would appear to be the only Saskatchewan region where breeding ospreys greatly outnumber Bald Eagles. It contains the greatest concentration of breeding ospreys yet known within Saskatchewan, in an area where the species was not previously known to occur.

We wish to thank Stuart and Mary Houston for their encouragement and advice.

Young Double-crested Cormorants Gary Anweiler

WANTED: COLONIAL BIRD INFORMATION

Saskatchewan and Manitoba have the largest percentage of the Canadian total of colonial birds. For this reason alone, a close vigilance of their numbers should be undertaken. Of the 15 species of birds that are colonial nesters in Saskatchewan, all except the gulls and terns are prone to nest desertion through human disturbance. Combined with their nervous nature, a visit to the colony at the wrong time may result in egg destruction through chilling and predation by gulls, or the young may suffer fatal sunburn. Destruction of a single major colony can lead to a serious setback in the overall population of a species.

This summer the Saskatchewan Museum of Natural History is conducting an inventory of the bird colonies in the province. If you know of any nesting colonies of the species listed below, we would be very interested in receiving any information that you can provide whether the colony is well-known or not.

Reports should include such information as the location of the colonies, the bird species in the colony and the approximate number of nests of each species.

Please forward this information to:
Keith Roney,
Natural History Research,
Museum of Natural History,
Regina, Saskatchewan,
S4S 0B3

Species of colonial birds found in Saskatchewan:

White Pelican
Double-crested Cormorant
Great Blue Heron
Black-crowned Night Heron
Herring Gull
Ring-billed Gull
Mew Gull
Bonaparte's Gull
Arctic Tern
Common Tern
Forster's Tern
Caspian Tern
Western Grebe
Eared Grebe

SHARP-TAILED GROUSE FLIGHT SPEED

ROBERT W. NERO,
546 Coventry Road, Winnipeg, Man. R3R 1B6

One method of estimating the flight speed of birds is based on an accidental encounter with one or more travelling for some distance on a parallel course with a vehicle. On April 11, 1970, an opportunity arose to clock a Sharp-tailed Grouse by this method. This was at 3:30 p.m. while travelling on PTH 12 near Piney in extreme southeastern Manitoba. The bird was seen in flight for about a quarter of a mile before a bend in the road brought us onto parallel courses. I drove in excess of 70 mph to overtake it, then paced it at a steady 55-60 mph for at least another quarter mile before it veered off. Its flight during this period was the alternated fast beat and glide typical of Sharp-tailed Grouse in normal distant flight. It was flying about 30 feet above the ground and was apparently not being pursued. Evidently it was moving to open fields to feed, for several other Sharptails were seen nearby feeding in cultivated land.

This observation permits an estimation of *ground speed* of 55-60 mph, but this needs to be qualified by a consideration of the wind speed and direction. Since the grouse was flying with the wind, estimated by weather authorities for that area and time at 11-15 mph, its *air speed* must have been about 45-50 mph.

SPECIMEN OF A VARIED THRUSH AT LUSELAND, SASKATCHEWAN

KIM B. FINLEY,
Box 8, Luseland, Sask.

On 25 September, 1975, a dead Varied Thrush was found beneath the window of a garage in Luseland, 105 miles west of Saskatoon. The thrush, which appears to be an adult female, was in excellent condition and had been dead for only a few hours. The specimen is being deposited at the Saskatchewan Museum of Natural History in Regina.

This bird constitutes the second known specimen record for this species in Saskatchewan. The first record consisted of an incomplete specimen of an adult male from Valley Centre, 60 miles east-southeast of Luseland.[1] The date of the Luseland record falls medially in the period of previous fall records for the province.[2] The majority of the Saskatchewan records for this species occur in the fall during the period 4 September to 14 November, possible indicating a wide autumn dispersal for this species.

[1]RENAUD, W. E. and D. H. RENAUD. 1975. *Birds of the Rosetown-Biggar district, Saskatchewan*. Sask. Nat. Hist. Soc., Spec. Publ. No. 9. 121 p.

[2]SEALY, SPENCER G. 1971. *The Occurrences of some western birds in Saskatchewan*. Blue Jay 29: 184-196.

TOWNSEND'S WARBLER AT SASKATOON

STANLEY J. SHADICK,
810 Main St., Saskatoon, Sask.

At 1 p.m. on September 7, 1975, my attention was attracted by a brightly coloured warbler having a bath at our backyard waterfall. This waterfall is 3 feet high and drains into a goldfish pool. As it is only 10 yards from our back window it provides an excellent location for observing birds. Over the last 10 years the waterfall has attracted 23 of the 25 species of warblers previously recorded in Saskatoon.

My first impression was that it was an "unusually striking" Black-throated Green Warbler. I called my mother, Mary Shadick, to have a look. I opened the field guide, "Birds of North America", to point out the field marks when I realized my identification was incorrect. The bird had a dark cheek, yellow breast and distinct black streaking on sides and throat. It was clearly a Townsend's Warbler, a species which breeds in the mountain regions of British Columbia and Alberta. I had previously seen it on two occasions in British Columbia. After a couple of minutes the warbler left and was not seen again.

This is the first record of this species for Saskatchewan. W. Ray Salt in "Alberta Vireos and Wood Warblers" states that the bird rarely wanders from the mountains. The most easterly record is of a male observed above the Rosebud River between Calgary and Drumheller on May 18, 1935. The Saskatoon report is approximately 300 miles further east.

MIGRATING EAGLES — CADOMIN, ALBERTA

PATRICK J. PAUL, c/o 10025 Jasper Ave., Edmonton, Alberta.

While working for the Alberta Provincial Government, I was following movements of Rocky Mountain Bighorn Sheep and hiked daily in the vicinity of Cadomin Mountain, several miles south-east of Cadomin, Alberta. Cadomin is about 150 miles west-southwest of Edmonton and just outside Jasper National Park.

On the 21 March 1976, I observed a pair of Golden Eagles hunting at approximately 6500 feet east of Cadomin Mountain and then work their way gradually westward. Although I was in the area for several hours more, no further birds were seen.

On the 22 March 1976, I was again in the area. From 1000 to 1400 hours I counted 106 eagles passing westward over Cadomin Mountain between 7500 and 10,000 feet, with the former altitude being more common. Early in the morning I observed what I assumed to be a pair of eagles hunting but after climbing up I decided that this was unlikely and what I had seen was probably an additional 15 eagles. Positive identification was made on approximately 25 birds and these were all adult Golden Eagles which leads me to believe that all were of the same species.

On the three days following 22 March, lone and paired eagles were sighted but they were infrequent and sporadic.

SANDHILL CRANE REQUEST

WANTED: Summer records of Sandhill Cranes in Saskatchewan and adjacent regions. Records of breeding and non-breeding birds in June and July, both historic and recent, are desired. Please send pertinent data to:

Dale Hjertaas
Dept. of Tourism & Renewable Resources
Wildlife Research Unit
2602 - 8th Street East
Saskatoon, Saskatchewan
S7H 0V7

REGINA WATERFOWL PARK NESTING SURVEY — 1975

ROBYN DONISON, 154 Millar Crescent, Regina, Sask., S4S 1N4

In April, 1975, Mr. Fred Bard, former Director of the Saskatchewan Museum of Natural History, in Regina, encouraged Dwayne Harty and myself to carry out a marsh survey of the Regina Waterfowl Park. In the larger parts of the area, where extra help would be needed Keith Neufeld consented to help us out.

The area surveyed (see map) was from the Broad Street Bridge, following Wascana Lake, east of the Bypass to about one-fifth of a mile east of the Rainbow Bridge. Because of the large number of songbirds that also nest in the area, we felt the birds of the adjoining park areas, (including nurseries and a small area of native grassland) should be surveyed along with the nesting water-birds that would be concentrated along the shore of Wascana Lake and Creek.

The object of the survey was to have accurate up-to-date records on the nesting species of the area to make more complete information available about the birds described in Belcher's "Birds of Regina". Within 20 years most of the birds that are listed in this survey may have vanished because of future plans for park development and the growth of the city.

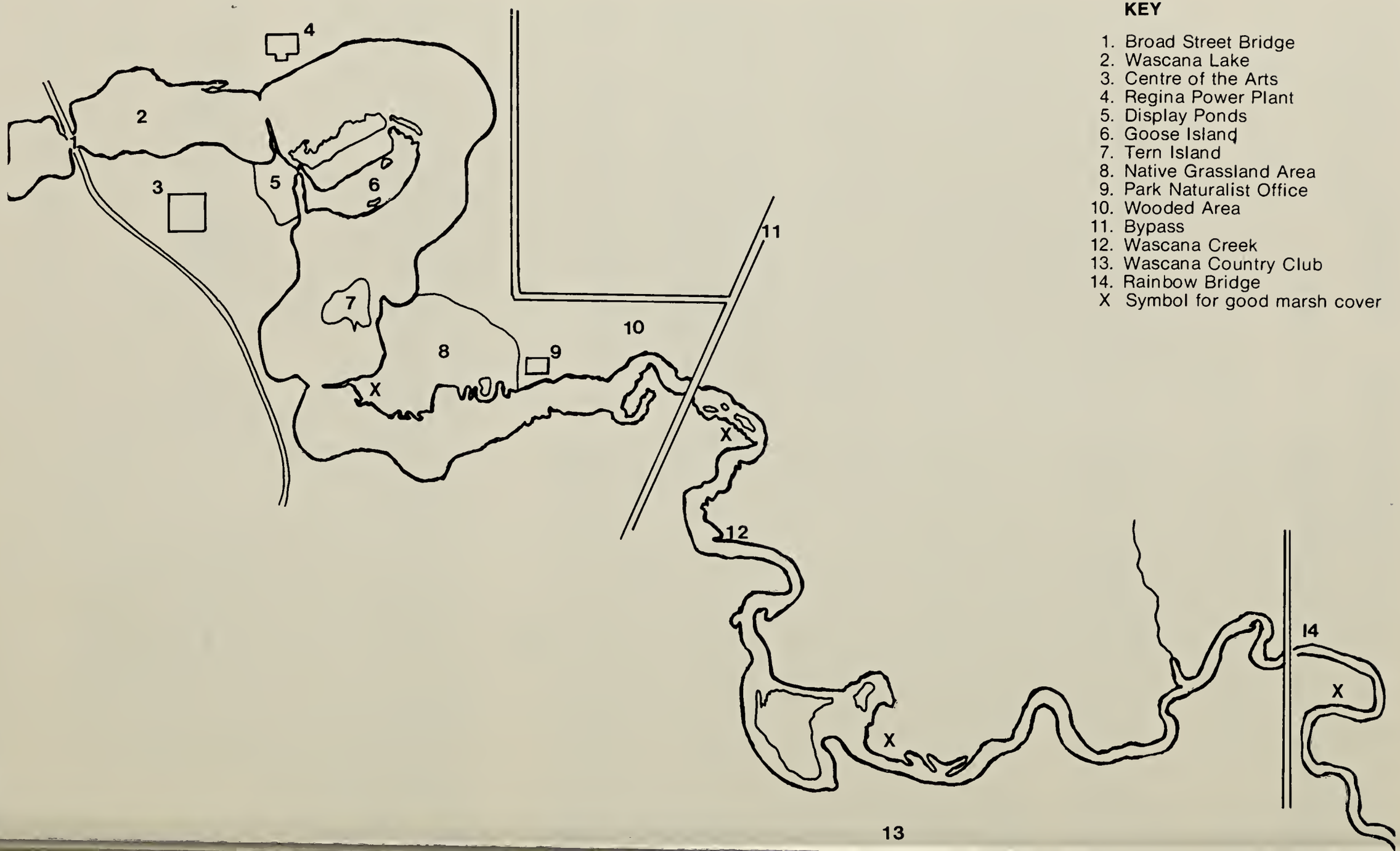
Most people do not realize the value and uniqueness of the Regina Waterfowl Park. They will refer to it as a waste of money or a breeding place for mosquitoes. Almost 100 of Saskatchewan's 326 species of birds nest in this area. If it is destroyed, as so many other marshes have been across the country, most of these species will begin to disappear. They will not, as most people think, find another nesting area, they will simply vanish.

The last time a survey of this type was done in the area was in 1962 when Richard Sanderson and Bill Fleming, with the guidance of Fred Bard, surveyed the same area. (*Blue Jay*, March, 1964).

Weather Summary: Normals based on records from 1941-1970.

With the aid of the monthly meteorological bulletins published by the Regina Weather Office, Atmospheric Environment Service, a summary of weather conditions from April to June is presented below.

	April	May	June
Mean Temperature, 1975	-0.1°C	+ 10.6°C	+ 15.5°C
Normal Temperature	+ 3.3°C	+ 10.6°C	+ 15.3°C
Mean Windspeed, 1975	13.3 mph	12.1 mph	9.6 mph
Normal Windspeed	14.3 mph	14.5 mph	13.3 mph
Mean Rainfall, 1975	1.12"	0.6"	7.84"
Normal Rainfall	1.43"	1.5"	3.24"
Mean Snowfall, 1975	7.5"		
Normal Snowfall	4.1"		


KEY
1. Broad Street Bridge
2. Wascana Lake
3. Centre of the Arts
4. Regina Power Plant
5. Display Ponds
6. Goose Island
7. Tern Island
8. Native Grassland Area
9. Park Naturalist Office
10. Wooded Area
11. Bypass
12. Wascana Creek
13. Wascana Country Club
14. Rainbow Bridge
X Symbol for good marsh cover
1
2
3
4
5
6
7
8
9
10
11
12
13
14
X
X
X
X

A storm front in northern Nebraska, in mid-April, held the majority of our waterfowl in the States, with our earliest ducks arriving as late as the tenth of April.

Regina's weather during April was cold, with heavy snow during the first two weeks and then warming up to near normal conditions. May was cool for the first couple of days, but throughout the rest of the month it continued to get milder with fairly light winds and little rainfall. June weather varied throughout the month with light winds and very heavy rainfall in late June. On June 25 there was record rainfall in 24 hours, 5.22 inches fell over the city, with strong southeast winds (30-45 mph) and tornados were observed north of the city. Rain continued into the 26 and the evening of the 27.

June had the highest recorded rainfall — 7.84 inches — in almost 90 years of records. This did some, but surprisingly, not much, damage to the breeding bird population and, while most of Regina's 150,000 people were busily bailing water out of their homes, I was busily building up the two dozen, near flooded, tern nests on Tern Island!

The water levels for 1975 were very high, almost as high as 1974. Most of Goose and Tern Islands were under water during late April and early May. The water level throughout the rest of the spring and summer dropped fairly quickly, even after the heavy June rains.

Probably the best nesting sites in the area are Goose and Tern Island, bypass, Rainbow Bridge and the native grassland areas. Tern Island alone boasts a number of birds breeding on and around it, with a total of 119 nests and 353 eggs found.

The best area for songbirds is the shrubbery around the native grassland along with the wooded area to the west of the bypass. The best area for divers is east of the bypass, although some breed around Tern Island and the native grassland areas.

Annotated List of Species

n - nest, e - eggs, y - young

Horned Grebe: Rare but regular. 2n, 11e. Probably only 2 or 3 pair nest within the area each year. Both nests found near Rainbow Bridge on June 7.

Eared Grebe: Fairly common. 7n, 42e. Five nests in one colony found off the north shore of the creeks opposite the Wascana Country Club. Two nests were found close to the shoreline of the native grassland area. A large colony was present in the marsh, at the Regina Power Plant, up to 1973 where 35 nests were located, but in 1974 only two nests were found.

Pied-billed Grebe: Uncommon. 3n, 18e. Uusally Pied-bills are fairly common, 6 or 7 pair nesting in the area each year. Throughout July young were seen.

American Bittern: Rare but regular. 4y. An adult bird was flushed from reeds at the Rainbow Bridge on August 9. Four young, barely old enough to fly, flew out behind adult bird. Adult birds flushed through May, June and July along the shoreline of the native grassland areas and at Rainbow Bridge, but no other nests or young were found. Probably 1 to 3 pairs of bitterns nest in the area each year. (One nest found at Rainbow Bridge in June, 1973).

Canada Goose: Abundant. About 135 nests counted. Over 1,000 eggs were laid, but apparently only a little over half were hatched. One nest contained 14 eggs , one contained 15. Flightless young seen throughout the area until September 10. Adults started laying eggs in early April (usually late March). Higher water levels this year flooded many nests. In 1974 10% more nests were flooded than in 1975.

Young American Bitterns — Gary Anweiler

Mallard: Very common. 21n, 154e. Nests were found as early as the fourth week of April. Fred Lahrman and Lorne Scott reported finding two nests in old crow nests, which were 20 yards apart and 12 feet up in spruce trees. On a survey of the young ducks on July 27, 21 young were counted on the lake, from the bypass, west to the Display Ponds. One nest was found the 3rd week of July and flightless young were seen from early June to October. Three nests were found on Tern Island.

Gadwall: Common. Although only 5 nests and 27 eggs were found, adults with young were seen throughout the area from June to October. On July 27, 33 young were counted. A slightly above average nesting year for Gadwall.

Pintail: Common. 6n, 56e. Pintails were nesting as early as April 25 and young were still flightless in October. A female Pintail was observed incubating 5 Canada Goose eggs during July and part of August. Her original nest which was 3 feet from the goose nest was destroyed by intruders and she started to sit on the nearby, recently abandoned, goose nest. She plucked down from her breast and lined the nest with it, until she was forced, by time, to desert the goose nest. On July 27, 22 young Pintails were counted in the area.

American Wigeon: Common. 6n, 48e. A slightly above average nesting year for Wigeon. Not many nests were found, but adults with young were seen all over the area. Flightless young were seen into October. On July 27, 28 young were counted.

Green-winged Teal: Rare but fairly regular. 1n, 9e. Only one nest found, but, 2 broods of young seen during summer. The nest was found on Goose Island in mid-July.

Blue-winged Teal: Common. 7n, 74e. About as common as Pintail. The first nest was found in early June. Flightless young were seen until the end of September. On July 27, 25 young were seen.

Shoveler: Common. 5n, 46e. Not many nests were found, but, like other puddle ducks, adults with young were seen commonly over lake until October. 23 young were counted on July 27.

Redhead: Uncommon. 3n, 38e. One nest was found on Tern Island and the other 2 were found near the Rainbow Bridge. Usually 2 to 4 pairs nest in the marsh each year. On July 26, 14 young were counted.

Canvasback: Fairly common. 4n, 33e. Two nests were found near Tern Island, the other 2 were found near the Rainbow Bridge (near Redhead nests). Three to 5 pair usually nest in the marsh each year. On July 27, 15 young were counted.

Lesser Scaup: Rare but regular. 1n, 9e. The nest was found near Tern Island. A few weeks later a female with 5 young was seen. That same day, at the Rainbow Bridge, another 6 young were seen with a female. One to 2 pairs probably nest in the marsh each year, with additional nests when water levels are more favorable. On July 26, 11 young were counted.

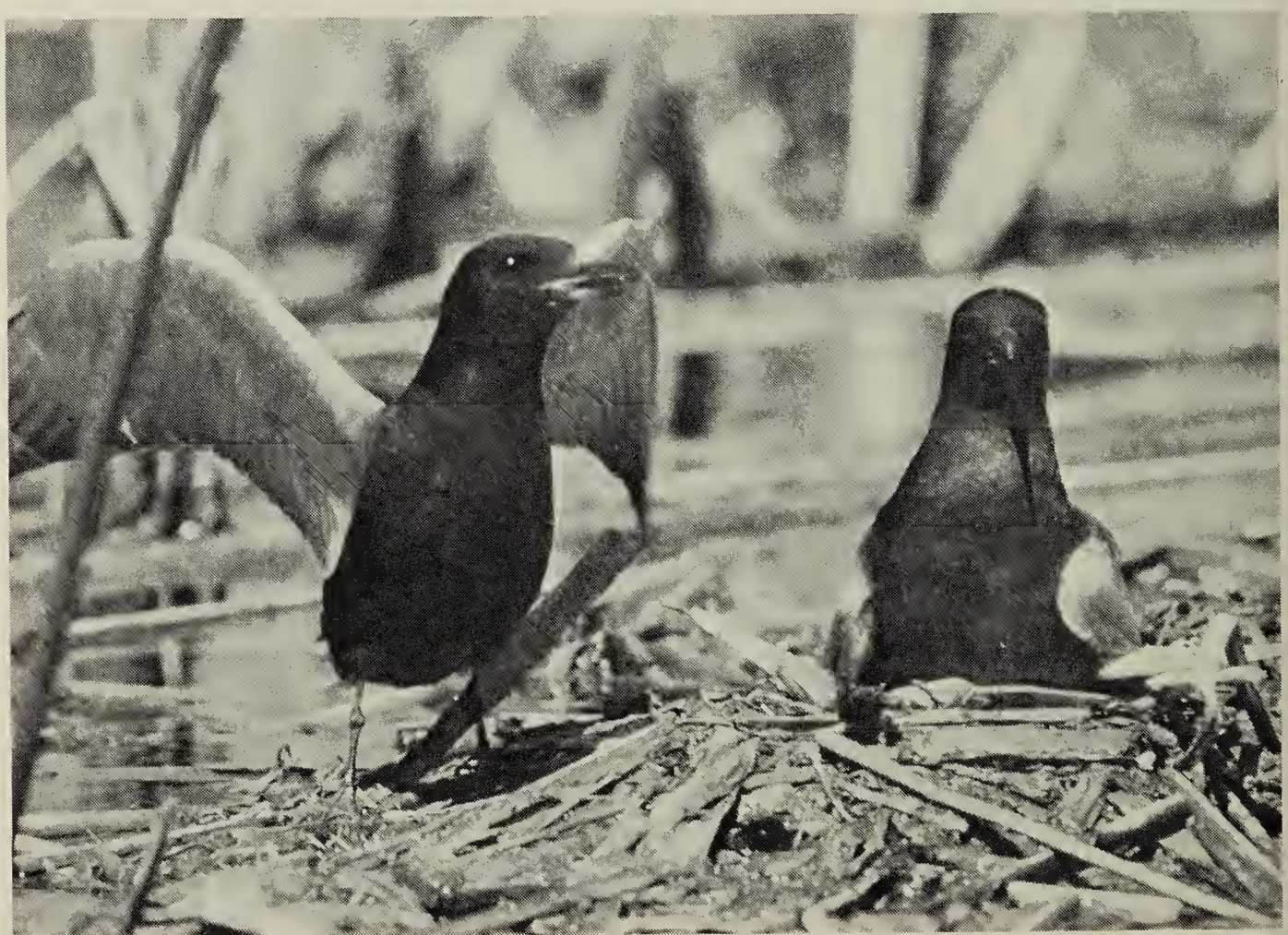
Ruddy Duck: Uncommon. 2n, 22e. Three groups of young (12y) were seen on July 26. One nest was found near Tern Island, the other at Rainbow Bridge. Probably between 2 and 5 pairs nest in the marsh each year (depending mainly on water levels).

Gray Partridge: No nest was found, but birds were flushed near the shrubbery at the native grassland area and east of the bypass, throughout the summer. Probably fairly common.

Virginia Rail: Rare but regular. 1n, 9e. Five birds were seen throughout the area during the summer and one broken egg was found along the shore east of Rainbow Bridge. The nest was found opposite the Wascana Country Club. Probably between 2 to 5 pairs nest each year.

Sora Rail: Common. 3n, 24e. Nests found in marsh near the native grassland, Rainbow Bridge and Wascana Country Club areas. About 2 weeks after finding the nests (late June), 7 families of Soras were seen in

Pair of Redheads, male Blue-winged Teal — Doug Gilroy



Pair of Black Terns. — Doug Gilroy

the area. Two families were seen on Tern Island.

Yellow Rail: No nests or young were found but adult birds were heard throughout late May, June and part of August, near the Wascana Country Club — Rainbow Bridge areas. Mostly in wet, reedy fields.

American Coot: Very Common. 25n, 249e. Only 9 pair nested west of the bypass. Families of flightless young were seen until October. About an average year for coots, but this year numbers were low compared to the numbers in Sanderson's 1962 Nesting Survey, when 117 nests were found from the Broad Street Bridge east to the Wascana Country Club area. Three coot nests were found on Tern Island compared to 21 in 1962.

Killdeer: Common. 4n, 15e, 12y. Our most common nesting shorebird. Adults on territory throughout area (including Goose and Tern Islands). Nests were found on Tern Island, Regina Power Plant Roof, native grassland and Rainbow Bridge areas.

Common Snipe: Uncommon — status as a resident not clear. No nests or young were found, but, one pair was definitely on territory on the northwest side of Rainbow Bridge, another pair on territory east of Rainbow Bridge. Both were in wet fields.

Spotted Sandpiper: Common. 5n, 24e, 9y. This is the most common sandpiper of Wascana. The nests were found on Goose and Tern Islands and at the Regina Power Plant, native grasslands and Rainbow Bridge areas. One bird was still on eggs on August 5. The number of eggs varied from 3 to 5.

Upland Sandpiper: No nests or young were found but one pair was just outside of the area, east of Rainbow Bridge. They were seemingly on territory during late May, June, July, August and part of September. During late June, July and August the birds flew and dove at me as if protecting young.

Willet: Uncommon but regular. 5y. Formerly bred throughout most of the area in stubble fields. Presently only nest from Wascana Country Club east. No nests were found, but two groups of young were observed about one-fifth of a mile apart in the stubble field north of the Wascana Country Club. In one family, two young were found; in the other, three young. Apparently it occasionally tries to breed west of the bypass on Goose Island, in the native grassland or bypass areas; one pair was observed on territory on Goose Island during May until mid-June. Unfortunately, their nesting territory was the chosen site of a photographer, who was photographing the nesting Canada Geese. The Willets were forced to leave Goose Island to find another place to nest. Probably 2 or 3 pairs nest in the area each year.

Marbled Godwit: Rare but regular. No nests or young were found, but one pair was on the territory east of Rainbow Bridge during most of the summer. Probably between one and two pair nest in the area each year.

American Avocet: Uncommon but regular. 2n, 7e. Both nests were found near Rainbow Bridge. Like the Willet and Godwit, the Avocet formerly nested west of the bypass, it now rarely does. Usually around three pair nest in the area each year.

Wilson's Phalarope: Fairly Common. In, 3e, 4y. Nests from Wascana Country Club east. Also, occasionally breeds west of bypass. One nest was found in the field on the northwest side of Rainbow Bridge. The same day, two other families of young were seen in the same area. In one family, one young was found, in the other, two young. In total about 5 pair nested in the area. Both sexes defended nests and young throughout the summer. Probably between three and seven pair nest each year.

Forster's Tern: Rare. 4n, 13e. Two pairs were found nesting in the Tern Island area among the cattails. Forster's Terns are separated from the nearby Common Terns by the call and the nesting site. Two other nests were found near the Rainbow Bridge in the Black Tern colony. According to Belcher, the Forster's Tern has bred only once before in the area (June 1960).

Common Tern: Very common in their limited nesting habitat (Tern Island). 73n, 179e. Tern Island is the only area in or around Regina that Common Terns nest. These birds are now faced with the problem of the city moving in on their single nesting site and forcing the birds out of the bird sanctuary. So far there are no signs of the number of the terns decreasing. The island was built up a few years ago so that flooding would not be as much of a threat to the terns. This year was an excellent nesting year for them. The regular number of nesting pairs is usually 25 to 30. Terns started nesting in late May and a few were on eggs in mid-July. On June 25, 26 and 27, extremely heavy rains caused the lake to rise a few feet and 10 percent of the nests were destroyed; 9 percent of the pairs renested. Strict protection and continued preservation of the area may help save these remarkable birds from leaving the marsh. Already the numbers of the Common Terns are decreasing across their central and eastern North American breeding range.

Black Tern: Uncommon. 5n, 14e. Not quite as common as usual (10 to 25 pairs). Nests found east of Rainbow Bridge. Sometimes the nests were west of the bypass, around the Tern Island area.

Rock Dove: Fairly common. No nests or young were found but up to 50 pairs nest in the area. About 35 of these nest at the Regina Power Plant.

Mourning Dove: Very common. 37n, 69e. Probably as common in the area as they ever were. Some of these birds raise 3 broods a season. Four nests were found on the ground. One nest was found built onto a bunch of cattails. Birds were on eggs in mid-August. They favored shrubbery around the native grassland area. Two nested on Tern Island.

Black-billed Cuckoo: Uncommon but fairly regular. 3n, 8e. Nests were found in shrubbery near native grassland area. Two other birds were flushed from brush in the area, but no other nests were found. Probably a few cuckoos nest in the area each year. Cuckoos were especially common in 1973 when there was an extra large supply of caterpillars.

Short-eared Owl: No nests were found, but, in two locations (native grassland area and Rainbow Bridge) birds were flushed from the same spots throughout the summer. Presumably nest in the area most years: one nest found in June, 1974, in a field north of Regina University.

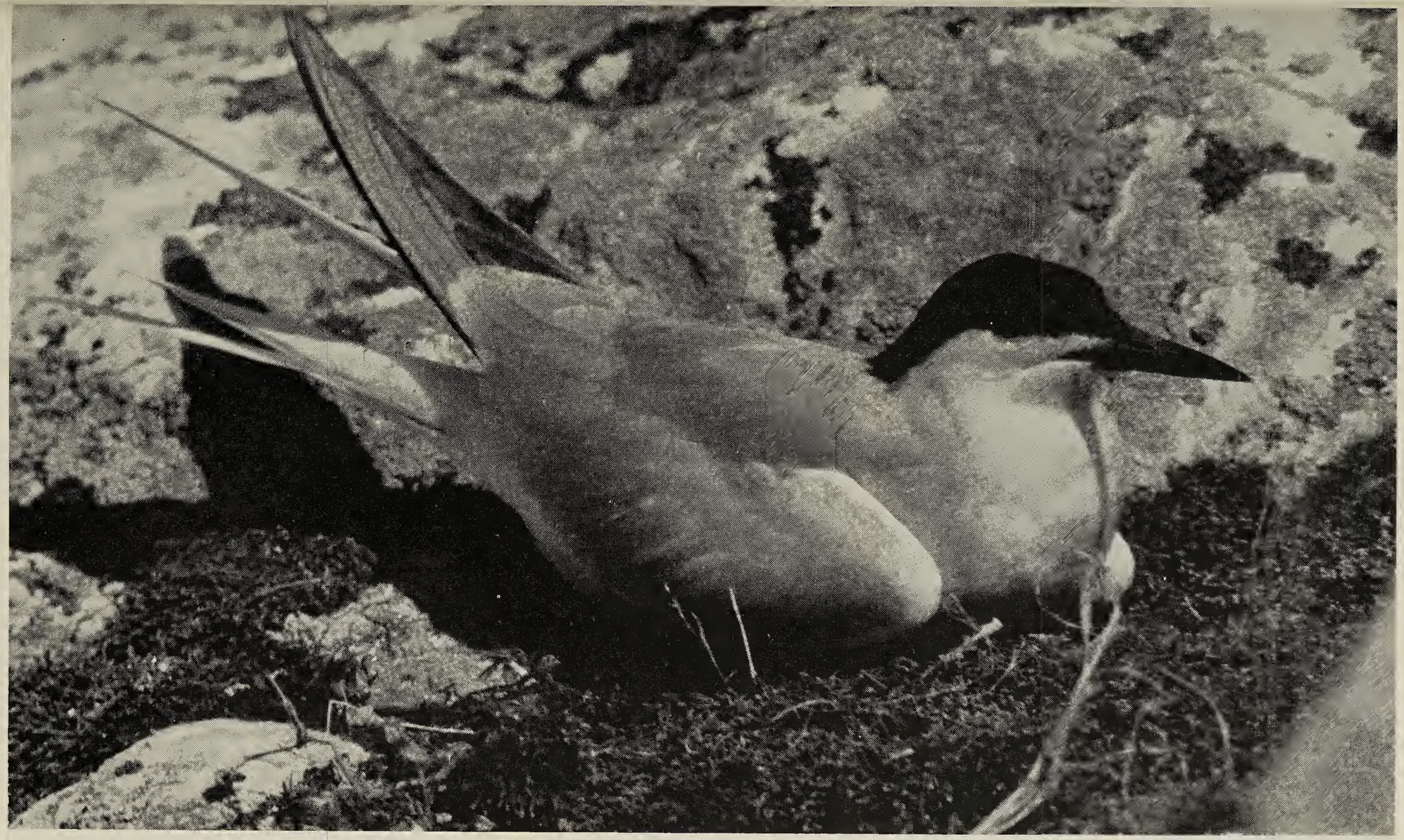
Yellow-shafted Flicker: Fairly common. 7n, 24e (in three nests, the other four were too high to get at.) Estimated 6 or 7 pairs nest in the area each year.

Eastern Phoebe: Rare, probably fairly regular. 1n, 5e. One nest was found under an abandoned bridge east of the Rainbow Bridge. Two other nests were found half a mile beyond the area, to the east. Probably present every year. (One nest found in the same location in 1973, and one nest found in an old shed near bypass in June, 1974.)

Eastern Kingbird: Common. 11n, 42e. Of our two species of fearless kingbirds, the Eastern is slightly more common. Common throughout the area, particularly in shrubbery near native grassland area. One nest contained an unusual number of 9 eggs. In 1974, kingbirds were especially common (35 nests found in the area). Probably around 15 pairs nest each year.

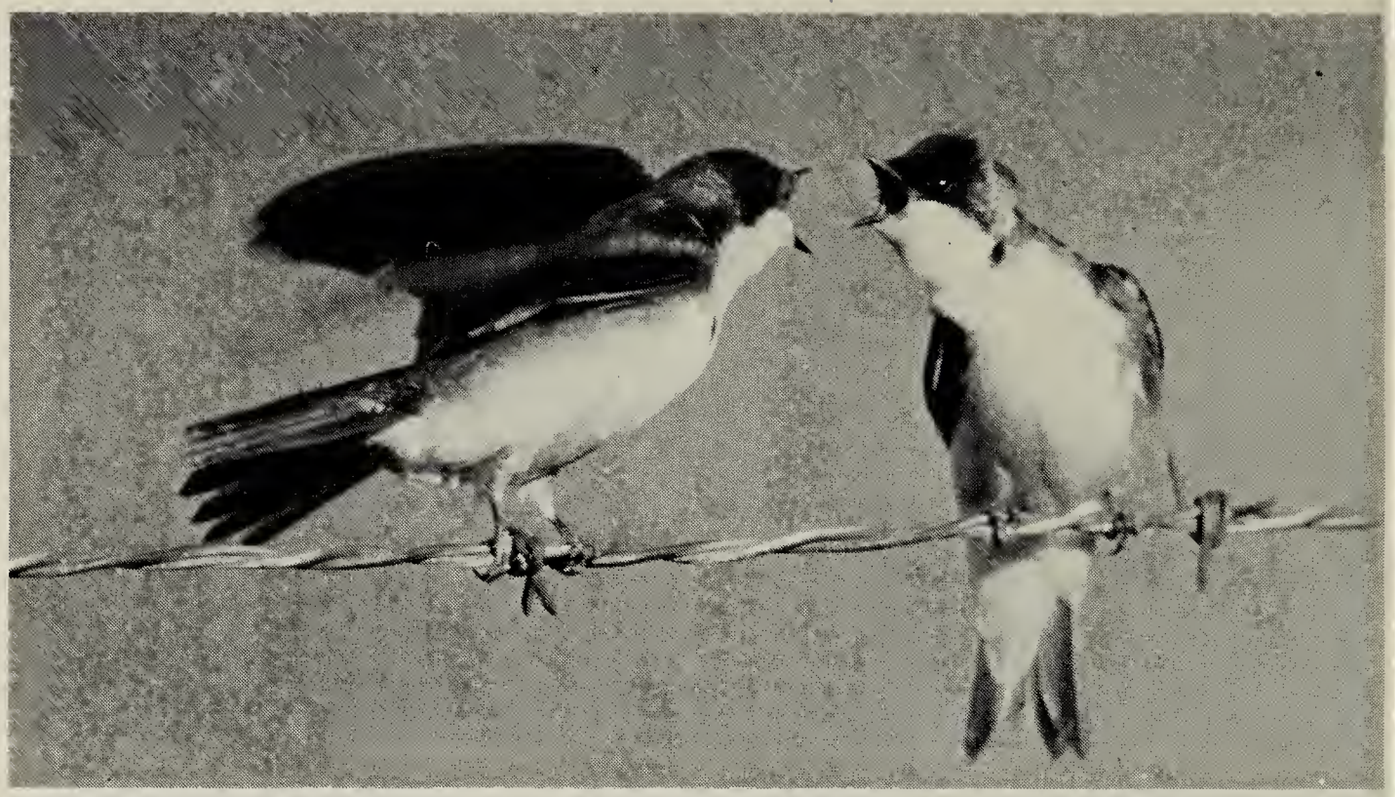
Western Kingbird: Common. 9n, 30e. Also favors shrubbery around the native grassland area. The Western was also especially common in 1974 (30 nests found in area). Probably about a dozen nest in the area each year. (One nest found in 1974 contained 8 eggs.)

Least Flycatcher: Fairly common. 4n, 12e, (3n). Probably more than half a dozen nest in the area each year. Favours the shrubbery around native grassland area. The Least Flycatcher nests between mid-June and August. One nest was too high to reach. (In 1972, 2 nests were found, in 1973, 3 nests were found, in 1974, 4 nests were found.



Common Tern

Fred Lahrman



Tree Swallow Fred Lahrman

Horned Lark: Fairly Common. 2n, 6e, 3y. One nest was found near the native grassland area and one near the Plains Hospital. Three other birds were flushed from the field east of Rainbow Bridge, but no other nests were found.

Tree Swallow: Fairly common. 7n, 45e. All nests were found in nest boxes on Goose and Tern Islands and the native grassland area. Two other pairs of birds were seen at Flicker holes, but were too high to reach. One of the nest boxes, set out for swallows, contained a House Sparrow nest and another contained a House Wren nest.

Bank Swallow: Fairly common. 11n, 2y. They have previously nested in the bank along Wascana Lake, east of the Regina Power Plant. The swallows this year nested in two small colonies of 5 and 6 pairs near the Wascana Country Club.

Barn Swallow: Fairly common. 8n, 37e. They nest in suitable locations throughout the area. One pair of Barn Swallows have been nesting on top of a door light at the Waterfowl Park Office for 4 years.

Cliff Swallow: Uncommon. 2n, 9e. Both nests were found under an abandoned bridge east of Rainbow Bridge. Three other nests were found outside of the area to the east.

Purple Martin: Fairly common at the martin houses. 9n. According to Lorne Scott, the Museum's three martin houses contained 9 pairs. These are the only martin houses in the Waterfowl Park area. On evenings in late August and early September, Keith Neufeld and myself watched from the Display Ponds a flock of over 1000 martins and swallows swarm over the lake hawking mosquitoes. By 9:00-9:30, each night the barbed-wire fences and power lines at the park would be completely covered by martins, Tree, Bank, Barn and Cliff Swallows and the odd Eastern and Western Kingbird.

Common Crow: Common. 12n, 56e. Nests were found throughout the area. Most people think the crow is a threat to songbirds. This is only true if the population is too high. Regina has a good population of crows and as long as they do not become too common, they should not be destroyed. Ten to 15 pairs nest in the area each year.

House Wren: Fairly common. 5n, 31e. Two nests were found in natural cavities. One nest was found in a Tree Swallow's house. One pair of birds built 5 nests in wren houses, 14 feet apart, near the Waterfowl Park Office. Only one box contained eggs.

House Wren Larry A. Morgotch

Long-billed Marsh Wren: Fairly common in suitable habitat. 5n, 9y. Of the 5 nests found in July, only 2 contained young. All the nests were found east of the bypass. One nest contained 4 young, the other nest contained 5 young, which were about 10 days old. The other 3 nests were definitely from separate pairs of birds because bits of old egg-shells were present in each nest. An estimated 4 to 6 pair nest in the area each year.

Gray Catbird: Common. 17n, 5e, 7y. Of 17 nests, only 7 still contained eggs or young. The catbird favours the shrubbery near the native grassland area. Young still in the nest until the first week of August. One nest contained a cowbird egg which was thrown out of the nest by the adult catbird.

Brown Thrasher: Fairly common. 3n, 2e, 17y. Young found in nest as early as mid-June and as late as early August. Two groups of young were observed out of the nest. Wherever there was a Brown Thrasher nest, a catbird would always nest no more than 100 feet away. Favored shrubbery near native grassland area.

American Robin: Common throughout the area. 7n, 12e, 12y. Young were seen out of the nest as early as late May and young still in the nest as late as early August. One nest contained 5 eggs. One nest contained a cowbird egg; as with the catbird, the egg was thrown out of the nest by the adult bird.

Cedar Waxwing: Fairly common. 4n, 9e, 3y. Young in nest were found between late June and mid-August. Favor shrubbery near native grassland. One nest was too high to reach. (In 1972, 3 nests were found, 1973, 2 nests were found, 1974, 9 nests were found.

Loggerhead Shrike: Fairly common. 3n, 7e, 12y. Favors shrubbery near native grassland area. Young are in the nest between early June and late July. One nest was found no more than 20 feet away from a Cedar Waxwing nest but, interestingly, both species ignored each other.

Starling: Rare but regular. 2n, 9e. Both nests were in old flicker holes. The small number of nests is due to limited wooded area and competition with other species for nesting sites. It is to be hoped that the numbers of this introduced species will not increase too greatly.

Warbling Vireo: Fairly common. 3n (Too high to reach). All nests were found in trees near native grassland area. An estimated 6 to 10 pairs nest in the area each year. Nests were 25 to 35 feet up in the trees.

Yellow Warbler: Common. 5n, 13e, 8y. Seemed to favor shrubbery near native grassland. Nests were between 4 and 5 feet off the ground. Probably over a dozen birds nest in the area each year. A cowbird egg was found in 2 nests.

Northern Waterthrush: At the base of the spillway at the Regina Power Plant on August 4, Keith Neufeld and I observed a waterthrush running nervously on top of the spillway. The next day, I saw the bird again and I thought I would take a closer look beneath the spillway. There, sitting on the walkway below, were four young birds which I believed to be young waterthrushes. In a few seconds, they took off with the adult bird and flew a short distance into the cattails. I estimated the young had been out of the nest for 2 or 3 days. This will have to remain a hypothetical record because only one observer had seen the young and because there are no other breeding records in the Regina area.

Common Yellowthroat: Fairly common. 1n, 5e. An estimated 6 or 7 pairs of yellowthroat nest in the area each year. On June 16, Lorne Scott and Fred Lahrman found a yellowthroat nest in the cattails on the southeast side of Rainbow Bridge.

Bobolink: Uncommon and irregular. 2y. No nests were found but apparently 5 pairs were definitely on territory in the field on the northwest side of Rainbow Bridge. Females were flushed by rope dragging many times but, unfortunately, no nests were found. Two other pairs were also on territory in the native grassland area but no nests were found there. In mid-August one young, of one family, was found about 2 days out of the nest. It could barely fly well enough to escape. One additional young was seen at Rainbow Bridge.

Western Meadowlake: Common. 3n, 5e, 7y. One family of young recently out of nest was observed in early June at the Centre of the Arts. Females were often flushed but no other nests were found.

Yellow-headed Blackbird: Very common. 67n, 215e, 25y. Present wherever there are cattails and willows. They are more colonial than redwings. They favor Tern Island, bypass and Rainbow Bridge areas. The first young were hatched in early June. Sixteen nests each contained one cowbird egg. Three contained 2 cowbird eggs each. Lorne Scott banded 40 young this summer. The young were fledged by June 17. Not as many were nesting as in the previous 2 years.

Red-winged Blackbird: Very common. 43n, 126e, 31y. Common in cattails and willows throughout the area. Usually slightly more common than yellowheads. Eleven nests containing one cowbird and 2 nests containing 2 cowbird eggs were found.

Northern (Baltimore) Oriole: Fairly Common. 3n, 1e, 9y. Two nests were too high to reach. One nest contained one egg and 2 young. Two other groups of young were seen out of the nest. One group was sitting by the nest. Each group contained 4 young. The nests were between 15 and 40 feet up in the trees.

Brewer's Blackbird: Fairly common. 3n, 14e, 2y. Two nests were found in native grassland area in the rose bushes. The other nest was in the Wascana Nursery, 3 feet up in a spruce tree in a colony of grackles. Probably about 8 or 9 pairs nest in the area each year.

Common Grackle: Common. 16n, 75e 9y. Five nests were found in the Wascana Nursery. Three were found in shrubbery near the native grassland. The other nests were scattered throughout the area. Two nests were found in cattails and one was found in a rose bush on the north side of Goose Island. Young were out of the nests as early as June 7, when 9 young were seen. Probably around 15 pairs nest in the area each year.

Brown-headed Cowbird: Common throughout area. One Least Flycatcher, one Cedar Waxwing, one American Goldfinch, 2 Yellow Warbler, 16 Yellow-headed Blackbird and 11 Red-winged Blackbird nests, each contained one cowbird egg. One cowbird egg was also found in a catbird nest and one in a robin's nest.

Loggerhead Shrikes. Gary Anweiler

both eggs were thrown out by the adult birds. Two Yellow-headed Blackbird and 2 Red-winged Blackbird nests each contained 2 cowbird eggs.

American Goldfinch: Fairly common. 5n, 9e. (Two nests were too high to reach.) Nests were found between 4 and 15 feet up in the trees. One nest was destroyed by intruders. Nests were found in the Wascana Nursery and the shrubbery near the native grassland area. Probably between 4 and 9 pairs nest each year. (1972 - 2 nests were found, 1973 - 5 nests were found, 1974 - 9 nests were found.)

Savannah Sparrow: Uncommon in suitable habitat. 1n, 5e. One nest was found in the native grassland, one pair was found on the territory near the Regina Power Plant and a pair was seen in a field near Rainbow Bridge. Probably about 4 or 5 pairs nest each year.

Vesper Sparrow: Fairly common in suitable habitat. 2n, 9e. One nest was found in the native grassland area; the other nest was found on Goose Island, both in mid-June. Two other pairs were on territory on Goose Island, and one pair was on territory near the Regina Power Plant. Probably 9 or 10 pairs nest in the area each year.

Chipping Sparrow: Uncommon in suitable habitat. 1n, 2e, 5y. One nest was found near the Regina Power Plant with young about 10 days old. (Nest also contained 2 unhatched eggs.) Two other pairs were found on territory in native grassland. Usually only a few pair nest in the area each year.

Clay-colored Sparrow: Fairly common in suitable habitat. One nest was found in the native grassland by Fred Bard in mid-June, the other nest was found at the Regina Power Plant. One bird was flushed on Goose Island but no nest was found. Three pairs were on territory in the native grassland area.

Song Sparrow: Fairly common in suitable habitat. 1n, 5e. One nest was found on Goose Island in mid-June. The nest was later destroyed by a rainstorm on June 25. One other pair was on territory on Goose Island, Regina Power Plant, and 3 pairs were on territory in the native grassland area.

Summary of the Nesting Survey: A total of 67 species bred in the area in 1975 in addition to 8 hypothetical species. A total of 613 nests was found and 2,829 eggs. Over 100 species of birds have bred in the Regina area. So far, about

one-third of the total population of Saskatchewan birds and four-fifths of Regina's breeding bird population breed have bred in the Regina Waterfowl Park.

Acknowledgements: Thanks go to Vic Wadman, at the Regina Weather Office, for his much needed help in supplying the monthly weather summaries for the report of the nesting survey.

To Dwayne Harty and Keith Neufeld, who spent much of their time throughout May, June and July, helping me search the area for nesting species.

I am very grateful to Fred Lahrman and Lorne Scott, who gave suggestions on planning the survey and supplied the photographs.

I am very thankful to Margaret Belcher and Lorne Scott for proof-reading and editing the nesting survey report.

Most of all, I am especially indebted to Fred Bard, who introduced me to the Regina Waterfowl Park in 1972, and who originally suggested my doing a nesting survey. Throughout the past 5 years, Mr. Bard has given continued encouragement and help to me in my interest in birds.

Editor's Note: Robyn Donison is 14 years old. Richard Sanderson's 1962 study involved only 45 hours of field work with Bill Fleming. Significant differences in some populations are apparent, e.g., the earlier study turned up 14 Pied-billed Grebe nests, 117 Coot nests and 12 Common Tern nests. Only 14 species were listed for 1962.

ADDITIONAL MANITOBA RECORDS OF SHORT-TAILED SHREW

WALTER KRIVDA,
Box 864, The Pas, Manitoba

Apparently the Short-tailed Shrew, *Blarina brevicauda manitobensis* Anders., is less scarce than is generally thought. I first collected this subspecies near The Pas, Manitoba, in 1951. My note in the Canadian Field-Naturalist (1951) gives the circumstances and data of the first specimen collected this far north in Manitoba.

In September, 1973, Mr. Phil Reader of Reader's Lake, 13 miles from The Pas, took a Short-tailed Shrew in a mouse trap. The specimen, in alcohol, is in the writer's collection. This specimen was taken near a house and out-buildings in a stand of jack pines in sandy woodland.

In February, 1975, the third local specimen for this area was found frozen to death in the writer's wood pile in town. This specimen was somewhat desiccated when found. It was put into alcohol and donated to the Manitoba Museum of Man and Nature, Winnipeg. When being made into a museum skin, the fur slipped from one hind quarter. The skull is in perfect condition.

As is so often the case with a new range extension, once the proper microhabitat has been discovered, it may prove to be more frequent than these few records over a 25-year period would indicate.

RANGE EXTENSION FOR THE SHORT-TAILED SHREW

GARRY R. JONES
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The short-tailed shrew (*Blarina brevicauda manitobensis)* is at the northwest limit of its range in Saskatchewan and has been reported from 20 separate locations in the province to date. A review of these capture records and a recent distribution map for Saskatchewan was published by L. S. Riome.[2]

While investigating small mammal populations in cutover areas of the "Mixedwood" section of the boreal forest region of Saskatchewan[3] in 1974 and 1975, 36 specimens of *Blarina* were collected by the author. An additional 10 specimens were taken in 1975 by Mr. Eric Hadley of the Saskatchewan Forestry Association,

TABLE I.
Summary of capture records for the short-tailed shrew in 1974 and 1975 in Saskatchewan.

Location	*Month of Capture*	*No. of Specimens*	*Sex of Specimens*	*Age Category*
9.6 km. SW of Candle Lake T54 R23 W2	Aug. 1974	5	2♂, 3♀	1J, 4A
	June, 1975	4	2♂, 2♀	2J, 2A
	July, 1975	13	5♂, 7♀, 1U	7J, 1SA, 5A
	Aug., 1975	9	4♂, 5♀	2J, 4SA, 3A
3.2 km. NW of above location T54 R23 W2	July, 1975	3	2♂, 1♀	1J, 2A
7.5 km. S of White Gull Lake T56 R21 W2	Aug., 1975	1	1♀	1A
9.6 km. N of Christopher Lake turn-off (East of Hwy. No. 2) T54 R26 W2	Aug., 1975	1	1♂	1A
≈5 km. W of Bittern Lake T57 R27 W2	Aug., 1975	7	4♂, 2♀, 1U	5J, 1A, 1U
	Sept., 1975	2	2♂	1J, 1A
	Oct., 1975	1	1♂	1J
	U-unclassified		SA	
	J -juvenile		A	

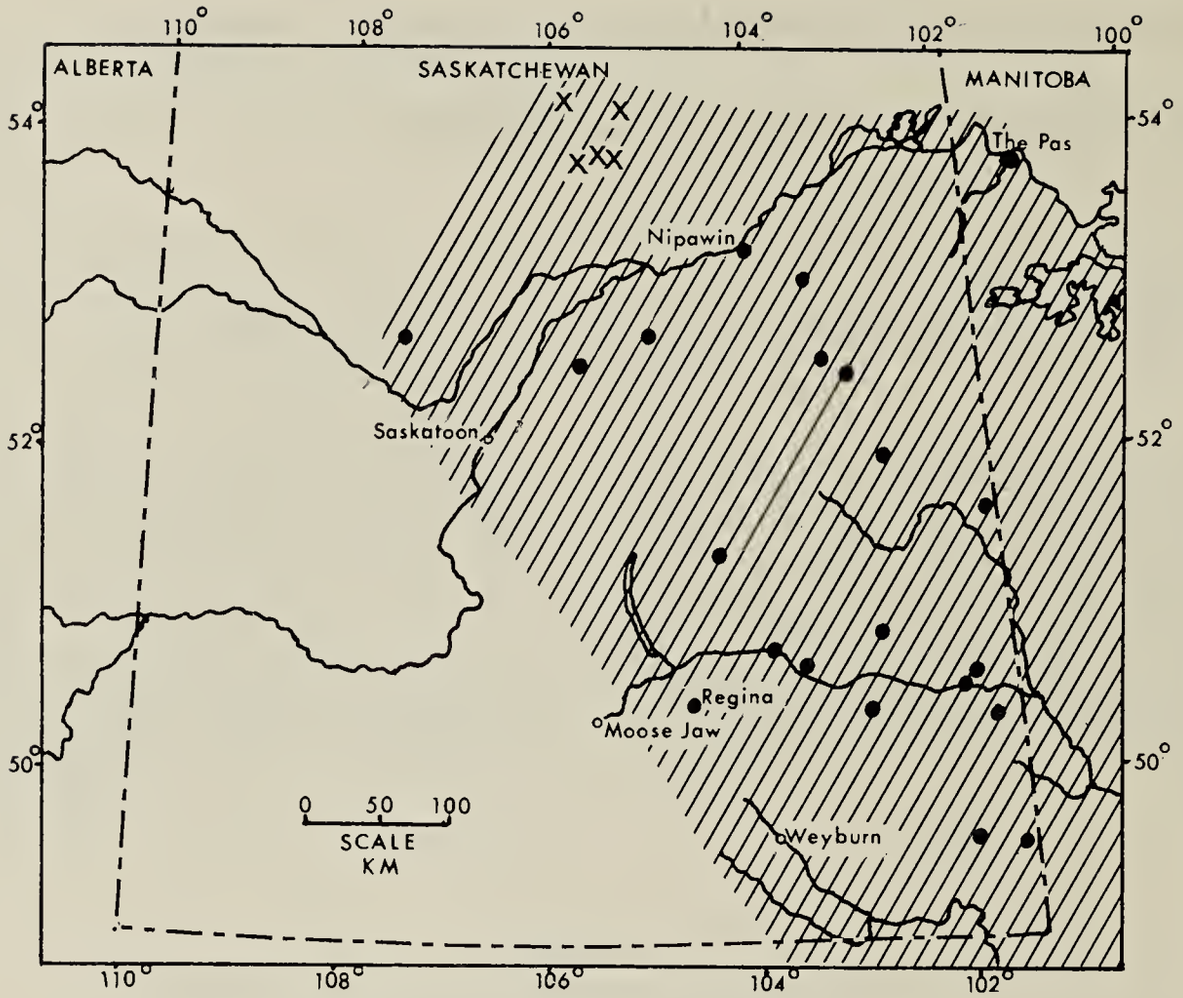


Figure 1. The distribution of *Blarina brevicauda manitobensis* in Saskatchewan. New records are marked X.

who was conducting similar studies in a cutover area west of Bittern Lake (T57 R27 W2). Mr. Hadley was kind enough to contribute his records to this report. The shrews were taken with Museum Special break-back traps baited with peanut butter. A summary of the new capture records is presented in Table I. Average measurements for adult specimens taken by the author were as follows: total weight 22 gm (19-26), total length 130 mm (125-134), tail 25 mm (22-28), hind foot 15 mm (14-16); for juvenile specimens: total weight 16 gm (14-17), total length 121 mm (114-126), tail 25 mm (23-28), hind foot 14 mm (13-15). Average measurements for the adult specimens contributed by Mr. Hadley were as follows: total length 126 mm (112-129), tail 23 mm, hind foot 15 mm (14-17); for juvenile specimens: total length 118 mm (106-129), tail 25 mm (22-28), hind foot 15 mm (14-17). Total weights were not available.

The new records represent a northern range extension for the short-tailed shrew in Saskatchewan. The distribution map (Fig. 1) is modified from Riome (1968) to include the new records.

The short-tailed shrew is a fossorial insectivore which prefers high humidity and decaying leaf litter as optimum environment.[1] It is, therefore, possible that *Blarina* may be found even farther north in Saskatchewan, in association with moist, deciduous habitats.

The author gratefully acknowledges the assistance of Mr. W. H. Beck in confirming the validity of these new records as representing a range extension for *Blarina* in Saskatchewan.

[1]BANFIELD, A. W. F. 1974. *The Mammals of Canada*. University of Toronto Press 1974, 438 p.

[2]RIOME, L. S. 1968. *Short-tailed Shrew at Nipawin*. Blue Jay 26: 201-203.

[3]ROWE, J. S. 1972. *Forest Regions of Canada*. Department of the Environment, Canadian Forestry Service Publ. No. 1300, 172 p.

SEASONAL FOOD AND PREY RELATIONSHIPS OF BADGERS IN EAST-CENTRAL ALBERTA

JIM R. SALT, 8731 - 117 St., Edmonton, Alta. T6G 1R6

A general mammal inventory and preliminary studies was undertaken 45 km (28 mi.) SE of Wainwright by the author in the summer of 1975 for the Provincial Parks Planning and Design Branch. This project was part of an ecological assessment of a relatively undisturbed region (110° 45′ and 110° 35′, 52° 37′ and 52° 33′). The major topographic features are the Ribstone Creek and marsh system, flowing along the west side of the area, then east and northward again through the southeast sector; an extensive tract of sand-ridges, elevated as much as 150 m (490 ft. north boundary) above the Ribstone system; three major lakes, Wallaby and Border in the northwest and David Lake in the southeast; and a considerable mixture of sand-ridge/marsh where the two ecosystems meet one another in the south-central area.

A complete mammal and bird checklist of this unique area is currently in preparation. The present note relates to the badger (*Taxidea taxus*) and related species, with particular reference to seasonal changes in food-supplies and feeding habits. The population of badger in the study-area was widespread, and signs of activity as well as the animals themselves, were encountered in all the sand-ridge systems, pastures and isolated extensions into the marshes and willow (*Salix*) bogs. Movement of the species across the Ribstone Creek system was facilitated by several weirs for flood control. Feces, tracks and the badgers were seen on the dykes leading to these weirs. But access to the insular sand-ridges in the marshes and bogs (west of David Lake, etc.) required that the animals traverse both extensive (0.5 to 1.5 km, 0.3-0.9 mi.) poplar tracts and wet bog-marsh habitat for total distances of from 1 to 2.5 km (0.6-1.6 mi.). In spite of this, all evidence suggested that the species had traversed this terrain at least twice in the spring-summer and early autumn of 1975. The first visit to the region, June 19, revealed a small degree of very recent badger activity in the isolated sand-ridge systems. The age of these feeding-dens was estimated at not more than 2 weeks, from condition of soil-mounds, the number of feces found in them (usually buried), and their small numbers (1 or 2 dens average at each feeding site). All older badger digs at these sites were clearly of at least 10-12 months' old. On the main sand-ridge system north and east of Ribstone Creek, badger feeding dens were noted dating almost continuously from early spring (April?) to recent. The inference was that the animals on the insular sand intrusions among the marshes had only very recently occupied these territories.

Investigations in June, including analysis of the stomach-contents of 2 badgers killed by automobiles and of ca. 40 feces groups, proved that the major food at time of the visit was pocket gopher (*Thomomys talpoides*). These were easily identifiable in the field by the presence of largely undigested forefeet of the animals, of which at least one, and usually 2 individuals were found in each fecal group (i.e., 2 in each stomach). The June investigation showed that Richardson's ground squirrel (*Spermophilus richardsoni)* formed a minor part (10 to 40% by number) of the badgers' diet.

During the June and subsequent studies, populations of pocket gopher,

Badger. L. A. Morgotch

Richardson's ground squirrel and the voles and mice (*Microtus*, *Peromyscus* and *Clethrionomys*) were surveyed by live and snap-trap methods, as well as by fecal and pellet analyses, nest counts, etc. Of these species, only *Microtus* was noted in the diet of the badgers. Some brief comments on the primary food-items of the badgers are presented below to the subject-species.

Richardson ground squirrel: A number of small colonies, some among the roots of willow clumps with Saskatoon berry (*Amelanchier alnifolia*) and some in extensive tracts of buckbrush (*Symphoricarpos* (*pauciflorus* Robbins?)), were noted on sand-ridges and insular ridge-systems. All colonies of 20 or more adults, however, were in pastures or grazed meadows. No young were in evidence June 19, but one family of 5 very small young appeared briefly June 20 in a pasture near David Lake. From July 21 - 31, 20% or fewer of the ground squirrels examined were adult, and of these, from 4% to 6% were males. By October 3, possibly due in part to some inclement weather, only 5 ground squirrels of this species were observed.

Thirteen-lined ground squirrel (*Spermophilus tridecemlineatus*): Found in casual association with the badger, but there was no evidence that badgers used them for food.

Pocket gopher: More numerous and more generally distributed than Richardson's ground squirrel. It was found on all insular ridge-systems and uplands in the marsh-bog matrix, as well as on the sand-ridges and in damp meadows and pastures near the lakes. Series of mounds extending from the upper ridges down into recently dried marsh and pond-edges were fresh in mid-June, suggesting that the animals had recently moved downward with the retreating water table. Great activity was recorded for the species in June, when specimens and live-trapped individuals were 80% immatures (June 19-21). At this time, new mounds were noted at the rate of 2 to 3 per individual per 24-hour period in all colonies studied. By opening the most recent mounds and leaving them exposed, I was able to obtain an estimate of reaction-time, the time elapsed before the opened den was plugged by the inhabitant. In mid-June average reaction time was 40 minutes, the longest being 70 minutes. Similar experiments and mound counts in late July indicated a great reduction in ac-

White-footed Mouse (*Peromyscus*).

ivity; new mounds were produced at a rate of less than 1 per 72 hours per animal, and reaction time in plugging he opened dens often exceeded 4 hours. Investigations in early October showed that there had been considerable activity, probably in late August and September, but by October 3 to 5, new mounds were noted at a rate of less than one per 72 hours, and in many communities no new digging was seen. The reaction time was as much as 20 hours at opened dens.

The June acitivity corresponds to he breeding of the species, the young of which begin feeding and digging in he last half of June. The only sight-records of pocket gopher were from his period, when young animals were ittle more than half grown and browsed on grasses and forbs.

Analysis of badger feces and the stomach contents indicated that he species depended heavily upon pocket gophers in the period from late March or early April to early July. By ate July, however, the fecal analyses of recent samples showed a considerable increase in use of Richardson's ground squirrels. The location of resh feeding dens — most of which were old dens revisited and renovated — for the period July 18 to 29, favored he colonies of Richardson's ground squirrel; only 25% to 30% of active feeding dens at this time were associated with pocket gopher communities. Fecal analyses showed that badgers, from about mid-July, had resorted to Richardson's ground squirrel for about 66% of their food, with 5 to 10% plant material included in the diet.

In early October, the number of feeding dens of the badgers had decreased significantly at all sites; the number of active dens recorded was at most 25% that of the July count. About 3/4 of these were in association with pocket gopher communities. Fecal analysis showed that in recent feces, pocket gopher accounted for 10 to 30% of food by weight; Richardson's ground squirrel was only 5-10%, and the meadow vole (*Microtus pennsylvanicus*) was found in 68% of fecal groups. The vole represented a small proportion by weight, however, for no more than 2 individuals were found in any fecal group. The bulk (by quantity and by weight) of foods in the early October survey was insects, principally unidentified grasshopper and beetles. The latter accounted for 50 to 90% of the food in fecal groups from the sand-ridge system. The proportion was somewhat lower for insular areas of the marsh matrix. But most badger ac-

Franklin's Ground Squirrel. Gary Seib

tivity recorded in early October was of a type unfamiliar to me, characterised by a profusion of small, shallow semicircular gouges, resembling the hoof-prints of cattle, and measuring 5 to 8 cm (2-3in.) in diameter and 3 to 7 cm (1-3 in.) deep. I examined dozens of such sites, at which the number of individual "digs" varied from 6 to 40 or 50. Feces of badger were almost always found at these sites, and the animals' tracks were often clear in the freshly-exposed sand. The feces here were not buried, as was usually the case at feeding dens. During the June reconnaissance, these peculiar marks had been noted on only one occasion. It is clear that these were sites at which badgers dug for beetles and other insects beneath the sparse grass and lichen.

After analysis of fecal and other data, if was found that feces from September-October collected at higher elevations (sand-ridge system) contained a very high proportion of insect in particular, beetle remains, while those from low elevations in and beside the marsh matrix contained about 30% pocket gopher, 30% microtine, and 40% insect foods. Three major beetles were: a june beetle (*Phyllophaga anxia*), the gold scarab (*Cotalpa lanigera*) and, less frequently a darkling beetle (*Embaphion (muricatum*?)). As aspen longhorn beetle (*Saperda calcerata*) was found in one fecal group from the marsh-edge.

All evidence suggests that the badgers of this region, in order to compensate for considerable fluctuations in preferred food sources alter both feeding habits and feeding localities. The centres of feeding-sites are in many cases relocated, apparently twice annually, to distances of as much as 4 km.

MEADOW LAKE GEOLOG
The Land — Past and Present

by E. A. Christiansen, Saskatchewan Research Council, G. A. Padbury, Saskatchewan Institute of Pedology, R. J. Long, Saskatchewan Museum of Natural History
Published by Museum's Branch, Department of Tourism and Renewable Resources in co-operation with the Saskatchewan Research Council.
50 p., 1975, $2.00

Meadow Lake Provincial Park and surrounding area is the subject matter of this geolog. It is intended to interpret the earth's history of the past two or three million years. An auto-tour of 106 miles starting from the Provincial Park Nature Center at First Mustus Lake works around 10 stops, ending near the starting point. To read the geolog first, then drive the route set out for us would be a perfect set-up, but much can be learned just from the reading alone.

The rock and soil formations tell many a story to the geologist. In this booklet, he tells us how the valleys and lakes were formed and how and why certain soils were deposited in their present sites. Much of this knowledge is gained by the use of boreholes. How so much information could be compacted into so few pages and still be readable is incredible.

The geolog does a good job of explaining what each continental glacier contributed to the earth's surface in the area under study. The booklet is written simply, and is colorfully illustrated with photos and drawings. It is difficult for scientists to write of their work on a level that is understandable to a layman but I believe this end has been achieved. The reading is helped greatly by a good glossary at the back of the booklet.

The MEADOW LAKE GEOLOG may be obtained from: Park Office, Meadow Lake Provincial Park, Box 70, Dorintosh, Sask.; Meadow Lake Regional Office, Box 580, Meadow Lake, Sask.; or Saskatchewan Museum of Natural History, Wascana Park, Regina, Sask. — *Pat O'Neil*, 1125 Elliott Street, Saskatoon, Sask. S7N 0V4

WILDLIFE OF OTHER LANDS

RON JAREMKO, Saskatoon Public Library, Saskatoon, Sask.

These are some recent titles dealing with wildlife in areas other than North America. Call letters are for the Saskatoon Public Library but will be similar to those in many other libraries.

BARRUEL, PAUL. *Birds of the world*. 1973. 222 p. Revised edition of a classic on bird behaviour treated on a world-wide scale. Illustrated with excellent photographs, many in colour.
Y598.2 B278

BELCHER, W. J. *Birds of Fiji in colour*. 1972. n.p. A collection of paintings by a pioneer in Fiji bird studies.
598.2996 B427

BERGER, A. J. *Hawaiian birdlife*. 1972. 270 p. A sourcebook on the birds of the Hawaiian Islands, past and present. Historical as well as biological information is given.
598.29969 B496

BREEDEN, STANLEY. *Wildlife of eastern Australia*. 1973. 224 p. The colourful first volume in a series covering the major bioclimatic areas of Australia.
574.994 B832

BURTON, MAURICE. *Animals of Europe.* 1973. 172 p. The author has divided Europe into five different zones and then examined how animals have fitted into these new environments.

Y591.94 B974

CANSDALE, G. S. *All the animals of the Bible lands.* 1970. 272 p. Studying every animal name in the Bible, the author has written a thorough study of Biblical fauna. Although largely text, there are a number of illustrations.

220.85 C228

CHINERY, MICHAEL. *A field guide to the insects of Britain and northern Europe.* 1974. 352 p. Concise text accompanied by clear illustrations combine to form a useful insect reference book.

R595.70942 C539

COMMON, I. F. B., and WATERHOUSE, D. F. *Butterflies of Australia.* 1972. 498 p. Up-to-date information on Australian butterflies arranged according to family. Also an interesting chapter on butterfly collecting.

R595.7890994 C734

GRIGSON, GEOFFREY. *A dictionary of English plant names.* 1974. 239 p. Entries giving the English plant-name, scientific name, date when introduced into England as well as some historical information.

581.03 G857

GRIMES, BRIAN. *Britain's wildlife.* 1974. 125 p. Birds, mammals, insects, reptiles, trees and flowers native to Britain in black and white and colour photographs. Text is limited to brief introduction and short commentaries to photos.

574.941 G862

HEALY, ANTHONY. *Australian insects in colour.* 1971. 112 p. Some of the 50 thousand Australian insect species illustrated and discussed.

Y595.7 H434

HEINZEL, HERMANN. *The birds of Britain and Europe with North Africa and the Middle East.* 1972. 320 p. Essential information for the birdwatcher given in convenient, compact form.

598.294 H472

JOHNSON, HUGH. *The international book of trees.* 1973. 288 p. All the major garden and forest trees of the temperate world photographed and discussed according to family.

OS582.16 J67

LEWIS, H. L. *Butterflies of the world.* 1973. 312 p. Coloured photographs of butterflies. Genetic and specific names, locations and other brief descriptive information about the world's butterflies.

R595.789 L674

LINSENMAIER, WALTER. *Insects of the world.* 1972. 392 p. Major groups of the world's insects and entomological phenomena analyzed and painted by a skilled and knowledgeable artist.

OS595.7 L759

McGREGOR, CRAIG. *The great barrier reef.* 1974. 184 p. The wildlife which makes up the exotic world of the Great Barrier Reef off the coast of northeastern Australia in colour photographs.

574.9943 M147

MORRISON, TONY. *Land above the clouds.* 1974. 223 p. A survey of the plant, animal and bird life of the Andes. Some aspects of folklore are also examined.

Y574.98 M882

MUUS, B. J. *Freshwater fish of Britain and Europe.* 1971. 222 p. Identification, feeding habits and life cycle of European freshwater fish.

CD597.094 M989

PERRY, FRANCES. *Flowers of the world.* 1972. 320 p. A compilation of world flowers arranged alphabetically according to plant families and illustrated by the beautiful paintings of Leslie Greenwood.

OS582.13 P462

PETERSON, ROGER TORY. *A field guide to Mexican birds; field marks of all species found in Mexico, Guatemala, Belize (British Honduras), El Salvador.* 1973. 289 p.

598.2972 P485

SANDVED, K. B. *Butterfly magic.* 1975. 128 p. Rare and popular species from the butterfly world photographed in beautiful colour in their natural surroundings.

595.789 S221

TATE, RO. *Desert animals.* 1971. 152 p. A study of the numerous animals that live in the desert areas of the world.

Y591.90954 T216

TITCOMB, MARGARET. *Native use of fish in Hawaii.* 1972. 175 p. A line illustrated descriptive list of Hawaiian fishes with additional information on Hawaiian fish lore and legend.

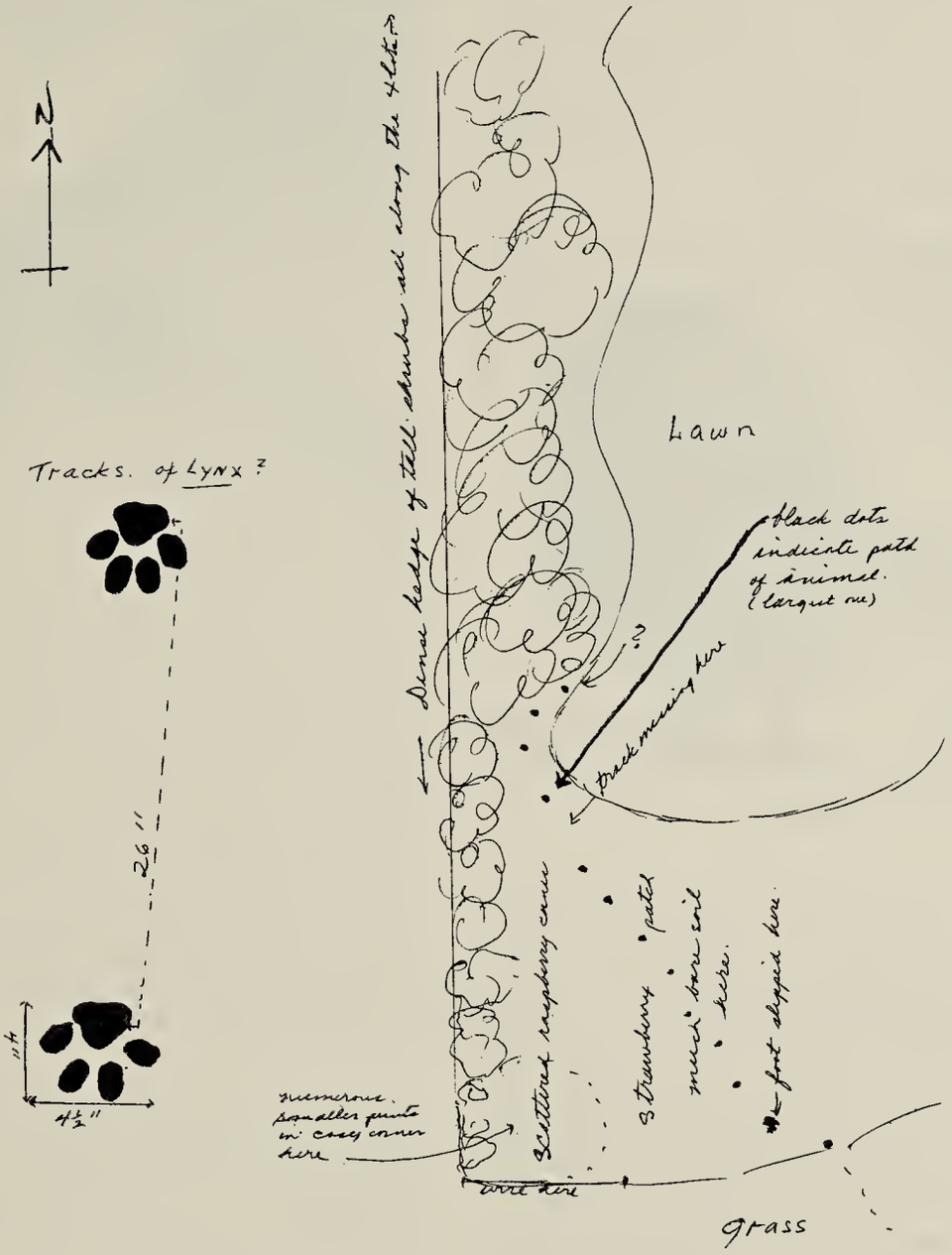
597.09259 T617

TWEEDIE, MICHAEL. *Atlas of insects.* 1974. 128 p. Characteristic insects of areas of the world that have distinctive animal populations described in coloured illustrations and non-technical text.

R595.7 T971a

Letters

COUGARS IN THE RASPBERRY PATCH?



While transplanting a few raspberry canes this afternoon I discovered 1 large cat tracks along with numerous smaller ones. All tracks were distinctly imprinted in the wet soil. The large tracks measured 4 1/2" x 4". The two sets of smaller tracks were 3" x 3" and 2 1/2" x 2 1/2". I believe these tracks to be those of a lynx and two kittens. (I have enclosed a sketch of the form of the tracks).

It would appear that the family travelled over the lawn in the shadow of a dense hedge of tall shrubs before stepping into the garden area. All tracks were visible on lot No. 4, block 27, in the *town* of *Carlyle* — (300 block, 7th Street West).

Just thought some one of the Blue Jay readers might be interested. *Doris Silcox*, Box 549, Carlyle, Saskatchewan. S0C 0R0.

Editor's Note: For additional reports of cougars in the Moose Mountain-Antler area see "Cougar Kittens" by Tom White in the March, 1973, *Blue Jay* (31:42-43).

ANOTHER TON OF SUNFLOWER SEEDS

Again this winter, we hauled a ton of sunflower seeds from southern Manitoba to supply 6 bird feeders near Togo (see W.J.C. May, *Blue Jay* 32: 181, Sept. 1974). A columnist in the *Brandon Sun* suggested such mileage was likely unnecessary — but failed to locate a nearer supply!

Black-capped Chickadee. Lorne Scott

A new window-sill tray, laden with sunflower seeds and augmented by rapeseed screenings, allowed us to observe closely 8 chickadees, 2 Hairy Woodpeckers, over 100 Common Redpolls and 2 Hoary Redpolls. We also had 23 Pine Grosbeaks, which are tamer and more musical than the Evenings, but they departed early in March. The Evening Grosbeaks came earliest in the winter and at the time of writing (March 12) have invaded us in unbelievable numbers. — *Wanda May*, Togo, Sask.

WINTER BIRDS AT ITUNA

I have had a lot of pleasure from my bird feeder this past winter, and thought others might be interested.

It began last November, when a flock of Evening Grosbeaks flew in, and about three dozen stayed around for nearly 3 weeks, gradually dwindling in numbers towards the end. I didn't see them again till the end of

Evening Grosbeak. Fred Lahrman

March, when a small flock (about a dozen) came back to the feeder, which I kept supplied with sunflower seed. Some of these are still around at the time of writing, (April 28).

The day after the snowstorm that we had on April 16th a little flock of Purple Finches hung around, and I had the most unusual sight of 9 Evening Grosbeaks on the feeder, and several Purple Finches on the ground below, surely a delightful experience. That same morning there were 2 or 3 very sad and dispirited Robins around so I put out quite a large tray of feed and by afternoon there were no less than 24 Robins busy around it, incidentally, in a much more cheerful mood.

In addition to these a very few chickadees and a Downy Woodpecker were regular visitors all winter long to a suet feeder. — *Mary T. Brennan*, Ituna, Saskatchewan. S0A 1N0.

MARCH BIRDS AT ITUNA, SASKATCHEWAN

The Junior Sportsmen of the Ituna 4H Club, went for a drive in search of spring birds. We sighted 12 species. They are Chickadees, Downy Woodpecker, Grouse, Magpies, Redpolls,

Blackbirds, Evening Grosbeaks, Meadowlarks, Bluebirds, Hungarian Partridge, Sharp-tailed Grouse, and Robins. We enjoyed the trip very much, which was on 29th of March and it lasted 1 hour and it was a 20-mile trip. *David Brennan*, Age 12, Box 104, Ituna, 4H Club.

FROLICKING MAGPIES

Am wondering if any of you have had a similar experience to the one I had this morning, i.e., family of eight magpies seemingly playing or teasing a woodchuck. I really believe they were playing and having fun. For they did not peck but merely hopped over and about him. They especially stared him in the face like a fighting cock and blocked his retreat to his shelter under the slab pile. The woodchuck did not seem overly concerned for he continued to feed, but now and then he made a rush at his tormentors. The click of my camera put the birds to flight.

Magpie. Gary Anweiler

It is possible that this behavior is similar to that of a kitten playing with its prey and a forerunner to killing it. It's a shame their methods of livelihood and survival are so cruel, for they are so pretty and graceful, and, seemingly, very intelligent.

You notice I referred to this woodchuck as "he" which is correct, for he is one of a pair that I encourage to inhabit my yard each year, mainly for my interest. They also help keep the weeds and, especially, dandelions clipped. They usually bring forth a batch of kits, as many as *six*, but none this year. — *Harold E. Hobden*, Box 171, Worsley, Alberta. T0H 3W0

HOUSE FINCH - AN OLD FRIEND

Most of us enjoy meeting old friends, and for this reason February 6, 1976, was a very exciting day for me. As I worked in the kitchen by my "bird-watching" window, I raised my eyes for the umpteenth time and was rewarded by the sight of two bright beady eyes staring at me from a distance of 5 or 6 feet. This little beauty sitting on our electric wires was a species which I had come to know very well indeed, in my home town of Vancouver, B.C. I had the pleasure of renewing acquaintance with hundreds of his friends and relatives in August, 1975, when I spent two weeks in Vancouver, sprawled on my brother's sun deck at eye level with the feeders. My little friend was a House Finch in full colour and never before reported in the Saskatoon area. He sat on the wires just above eye level until I had memorized every single marking on his underside, then he obligingly dropped down a couple feet to a clothes line, where all his upper parts were in perfect position for viewing. Binocs were completely superfluous as we

were so close to one another. There was no doubt whatsoever that I was being visited by a male House Finch — a bird almost as large as a House Sparrow but sleeker. The male is brownish with strong narrow stripes on the flanks and belly. He resembles a Purple Finch, of which there have been many in our yard. This specimen seemed to be in perfect condition and so brilliantly coloured. How he arrived in our part of the country — particularly at this time of year is a mystery but he seemed happy and content with his lot in life. I sincerely hope he made it through the rest of the winter. — *Pat O'Neil,* 1125 Elliott Street, Saskatoon, Sask. S7N 0V4.

Editor's Note: The following excerpt is from Breeding Bird Survey Newsletter Number 4 (April 20, 1976): "The most spectacular changes continue to be the increase in the House Finch east of the Mississippi River (mean annual increase of 30%). . ."

PROBABLE MELANISTIC WREN AT KATEPWA

While in Katepwa at Salter's Beach in early August, 1975 my brother Eric and I observed a completely dark wren singing madly in the dense brush by the lake. We were obviously near the nest, for it was frantic in its attempts to distract us, and its song was more of an incessant babble to distract or drive us away than anything else.

Since the different species of wrens do not adhere to strict areas in which they sing, that aspect did not help in identification; although one bush that was approached always brought forth the wren to drive us away. My brother observed a normal wren, its mate, seen with it. This wren did not have the plumage of either species of marsh wren but was more like a House or Winter Wren. Eric indicates that it seemed smaller, slightly darker and had a shorter tail than the House Wren, like a Winter Wren, which is not likely because their occurrence in Saskatchewan is not common. — *Tony Lang,* 65 Bobolink Bay, Regina, Sask.

30 Years Ago

The following excerpts are from the 16-page mimeographed *Blue Jay* of April-June, 1946, the last issue Mrs. Priestly edited before her death.

"An effort is being made to have April 10, the late Jack Miner's birthday, set aside as *National Bird Day* . . .". A questionnaire about the status of the Red Lily revealed that the flower was decreasing in most of the 200 communities replying. In 13 it had been extirpated and in 17 it was increasing . . . There were notes by L. T. McKim, Ralph Stueck and Steve Mann on ground squirrels and a jumping mouse hibernating in straw stacks . . . Stuart Houston had an article about J. H. Wilson of Indian Head who had banded 6,927 birds of 23 species, mostly ducks. A Marbled Godwit, banded at Yorkton, was found dead near Los Angeles. A Blue-winged Teal, also banded at Yorkton, was shot the next day 563 miles away in Minnesota . . . J. D. Ritchie wrote about a wasp that had caught and carried 11 flies to its subterranean nest . . . Maurice G. Street sent in the following: "A Canada Jay's nest found half completed March 18; this is rather later than the average. While hunting for other Canada Jay nests in a spruce bluff yesterday (24th), David Wright and I saw a pair of Black-capped Chickadees take a bath, almost at our feet, in a little pool of water which had formed at the base of a stump. The temperature was only just above freezing. Later we saw them catching tiny moths that were flying in some numbers." The last three pages were devoted to information on Whooping Cranes and a request that any sightings be sent to Fred Bard.

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